Review of 1985 South Coast Salmon Troll Fisheries

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ABSTRACT

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British Columbia troll fisheries south of Cape Caution were intensively managed for the first time in 1985. In-season management actions were designed to keep catches of each salmon species within prescribed limits while at the same time allowing each fishery to remain open for a smuch of the July-September season as possible. Troll fisheries in the Strait of Georgia, on the West Coast of Vancouver Island and in Johnstone Strait were managed with combinations of area closures, weekend and longer closed periods, and periods of non-retention for certain salmon species and fisheries. Catch ceilings for chinook and coho salmon were approached but not exceeded on the West Coast of Vancouver Island. The chinook catch ceiling in Georgia Strait was exceeded by less than five percent. Catch ceilings for sockeye, pink and chum on the West Coast of Vancouver Island, and for pink salmon in Georgia Strait, were exceeded due to changes in in-season forecasts of run strength and due to difficulties monitoring in-season troll catches when catches were rapidly increasing. Fishery managers expect that more precise troll management will bepossible in the future based on experience gained in 1985.

Key words: Pacific salmon, troll fishery management, southern British Columbia.

RESUMÉ

Pour la première fois en 1985, la pêche aux lignes traî n antes au sud du cap Caution (C.-B.) a fait l'objet d'une gestion intensive. Les mesures saisonnières ont eu pour objet de maintenir les prises de chaque espèce de salmonidés dans les limites établies tout en permettant une saison de pêche aussi longue que possible entre juillet et septembre. Dans le détroit de Géortie, sur le littoral ouest de l'Île Vancouver et dans le détroit de Johnstone, la gestion de cette pêche a été réalisée par la fermeture complète de zones, la fermeture pendant le week-end ou des périodes plus longues et des périodes de remise à l'eau pour certaines espèces. Dans le cas des saumons quinnat et coho, les limites de prises n'ont pasété dépassées sur le littoral ouest de Lîle Vancouver tandis que dans le détroit de Géorgie, la limite de capture du saumon quinnat a été excédée de moins de 5 %. Ces klimites ont été dépassées dans le cas des saumons rouge, rose et kéta sur le littoral ouest de l'île Vancouver et du saumon rose dans le détroit de Géorgie suite aux modifications des prévisions

saisonnières de la remonte et aux problèmes de contrôle des prises saisonnières quand elles augmentaient rapidement. Les gestionnaires des pêches prévoient une gestion future plus efficace de la pêche aux lignes traînantes grâce à l'expérience acquise en 1985.

Mots-clés: saumons du Pacifique, gestion de la pêche aux lignes traînantes, sud de la Colombie-Britannique

REVIEW OF 1985 SOUTH COAST SALMON TROLL FISHERIES

1.0 INTRODUCTION

The South Coast Division began active in-season management of the troll fishery in southern British Columbia for the first time in 1985. Previously, the troll fishery was opened in spring and closed in fall with occasional minor adjustments to fishing times and areas through the course of the season (Argue et al. 1983, 1986; Milne 1964).

The change to active in-season management was due primarily to imposition of salmon catch ceilings on the troll fishery (Table 1). Catch ceilings for chinook and coho salmon were a requirement of the recently ratified Pacific Salmon Treaty. Catch ceilings for Fraser River stocks of pink and sockeye were developed through the Minister's Advisory Council (MAC) once the Pacific Salmon Commission (PSC) had provided estimates of total allowable catches by Canada. These fixed upper limits to the seasonal catch and meant that the fishery could not be allowed to run its course without intervention.

Detailed fishing plans were necessary so that all concerned with the fisheries were informed of possible in-season regulations. Co-management committees consisting of fishermen, industry representatives and Department of Fisheries and Oceans (DFO) personnel developed fishing plans. The initial plans for the West Coast of Vancouver Island and for the Strait of Georgia were, for the most part, adopted wholly by DFO prior to the troll season. However, as salmon runs developed during the season and as experience was gained from the new process of in-season management of trolling, some of the plans were modified.

This report documents 1985 troll fishing plans for southern British Columbia (waters south of Cape Caution, Figure 1), in-season management actions and resultant catches in pieces for three troll fisheries, Strait of Georgia (Statistical Areas 13-18, 29), West Coast of Vancouver Island (Areas 21-27, 123-127, 130-1) and Johnstone Strait (Areas 111, 11-12).

2.0 STRAIT OF GEORGIA

2.1 Background

After announcement of troll catch limits by the Minister of Fisheries on June 5, 1985, DFO began discussions with the Gulf Trollers Association to develop a fishing plan for the Strait of

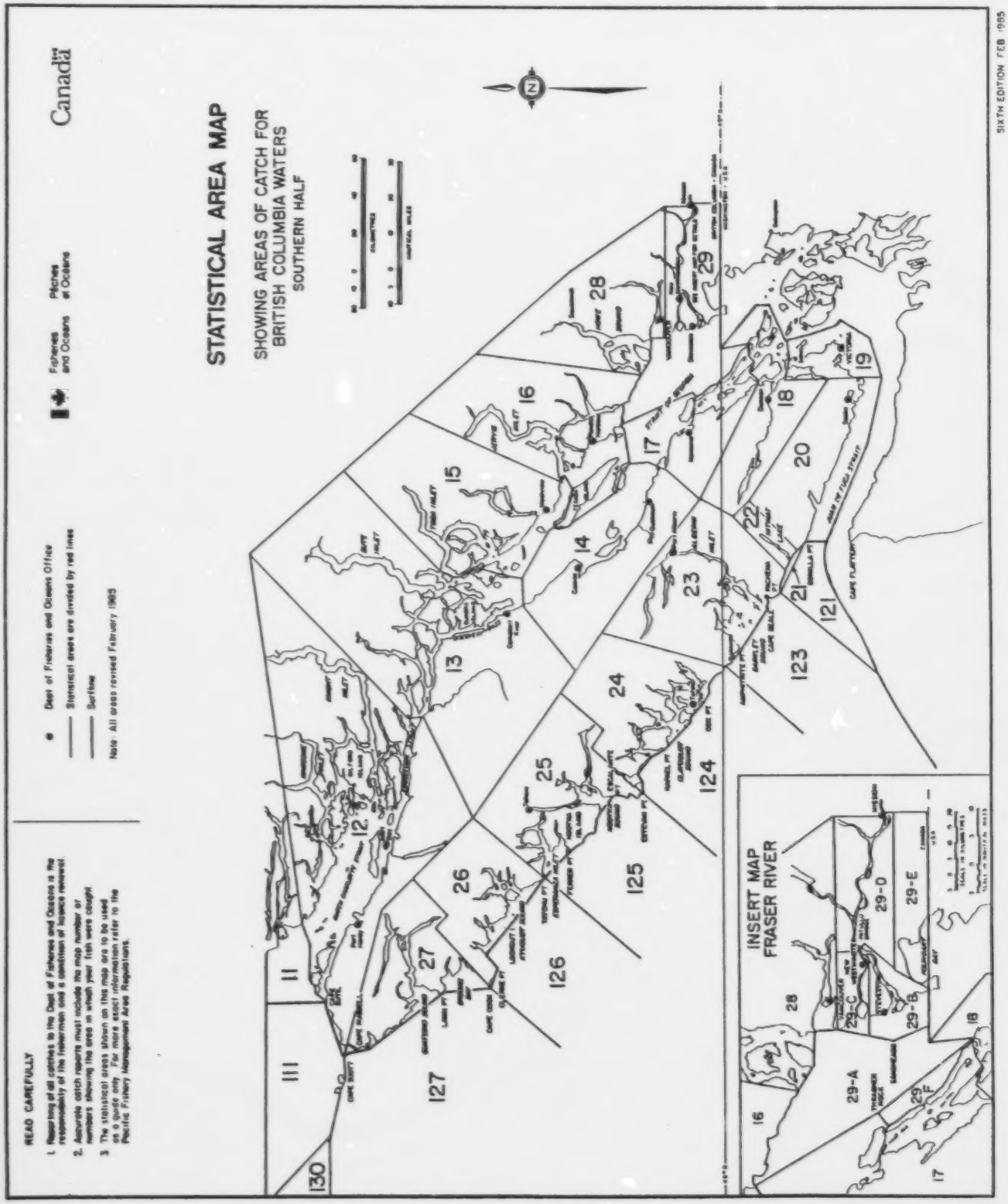
STATISTICAL AREA MAP
SHOWING AREAS OF CATCH FOR
BRITISH COLUMBIA WATERS
SOUTHERN HALF
Canada
Fisheries and Oceans
Pêches et Océans
READ CAREFULLY
1. Reporting of all catches to the Dept of Fisheries and Oceans is the responsibility of the fisherman and a condition of licence renewal
2. Accurate catch reports must include the map number or numbers showing the area in which your fish were caught
3. The statistical areas shown on this map are to be used as a guide only. For more exact information refer to the Pacific Fishery Management Area Regulations.
Dept of Fisheries and Oceans Office
Statistical areas are divided by red lines
Surfline
Note All areas revised February 1985
INSERT MAP
FRASER RIVER
SIXTH EDITION FEB 1985

Figure 1. Statistical area map for southern British Columbia.

Georgia. The catch limits were 50,000 chinook, 100,000 sockeye, 230,000 pink with no limits on coho or chum salmon. The chinook limit was only 28 percent of the average catch of 177,000 for the previous five years (Argue et al. 1986). This substantial reduction in chinook catch from that of previous years was of utmost concern to trollers and presented the most immediate problem for development of fishing plans. The problem of the new lowered chinook ceiling was made particularly acute by the desire of the Department to minimize use of non-retention fisheries.[1]

Both parties feared that the chinook catch ceiling would be reached early in the season. Under these circumstances, non-retention fisheries would probably be necessary, and these would likely result in many chinook dying after being hooked and released while trolling for other target species. If substantial numbers of chinook salmon were released after the ceiling was reached, then DFO would have no alternative but to close, or severely restrict the fishery. This action would likely foreclose opportunities to fish for other salmon species. Clearly it was important that the fishing plan address these concerns.

2.2 Fishing Plans

To slow the rate of chinook catch, the first fishing plan (Appendix I) permitted four instead of seven days trolling per week during the chinook and coho fishery in the early part of the season. Trolling was to continue until 35,000 chinook were caught after which the remaining 15,000 chinook were to be reserved for later in the season. The postponed catch would allow for limited incidental chinook catches during the fishery for migrant pink and sockeye in August and September. The four day per week fishery was intended, then, to avoid either a chinook non-retention fishery or a troll closure.

At the beginning of the season it was believed that trollers would have difficulty harvesting the entire allotment of pink and sockeye. Therefore the plan was designed to provide increased opportunity to harvest sockeye and pink salmon as the season progressed.

The first fishing plan also allowed trolling in portions of statistical area 13 at times when net fisheries were closed. Trollers requested this feature to reduce competition between themselves and the net fleet.

---

1. A non-retention fishery is one in which prohibited species must be discarded alive. Discards are called shakers.

The areas in the Strait of Georgia that traditionally provide the bulk of pink and sockeye catches for trollers are managed by the Pacific Salmon Commission. Requests by DFO for additional trolling time in these areas were forwarded to the Commission.

From July 1 to 5 an estimated 27,300 pieces of chinook salmon were harvested. Since this catch was well in excess of the anticipated harvest of 12,000 pieces during each of three proposed four-day fisheries in July, Georgia Strait was closed to all trolling and the management plan was altered (Appendix II). To ensure that the 50,000 chinook catch ceiling was not reached too early, the retention of chinook salmon was now prohibited. The area re-opened to commercial trolling was designed to reduce chinook shaker catches and at the same time allow a directed fishery on coho. Thus trolling was only permitted one to three miles from shore in the center portion of Georgia Strait (Figure 2). This fishing plan was adopted for the next four-day fishery (July 11 to 14). In addition, a monitoring program was introduced to assess shaker losses (Section 2.4).

On July 16 the fishery was reviewed with representatives of Georgia Strait trollers and a new plan was adopted (Appendix III). Since less than 2,500 chinook shakers in excess of 21 in (54 cm) were estimated to have been released the previous week, more areas were opened to allow greater access to coho while still avoiding areas of high chinook abundance. The new plan continued chinook non-retention for 10 days until July 27 after which chinook catches were permitted until the catch reached 45,000 pieces. In addition, on July 28 the shoreline in traditional pink and sockeye areas (eg. management subareas 16-21, 17-11, Figure 3) was opened to allow greater access to these species.

The July 16 fishing plan continued with minor boundary changes until August 24 when the chinook catch was estimated to be 45,000 pieces. At that time, as stated in the July 16 plan, trolling was restricted to traditional sockeye and pink areas, and limited trolling was permitted in area 29 by the Pacific Salmon Commission (Appendix IV).

In response to representations by trollers, the Minister of Fisheries increased the Georgia Strait sockeye quota from 100,000 pieces to 125,000 pieces on August 11, and then waived the sockeye quota entirely on August 14. This meant that only chinook and pink catches were restricted by catch ceilings. The 50,000 ceiling for chinook was expected to be reached by September 1 based on estimated catch-to-date and extrapolating current effort and catch per effort forward. Chinook non-retention was introduced on September 1 by a revised management plan (Appendix V).

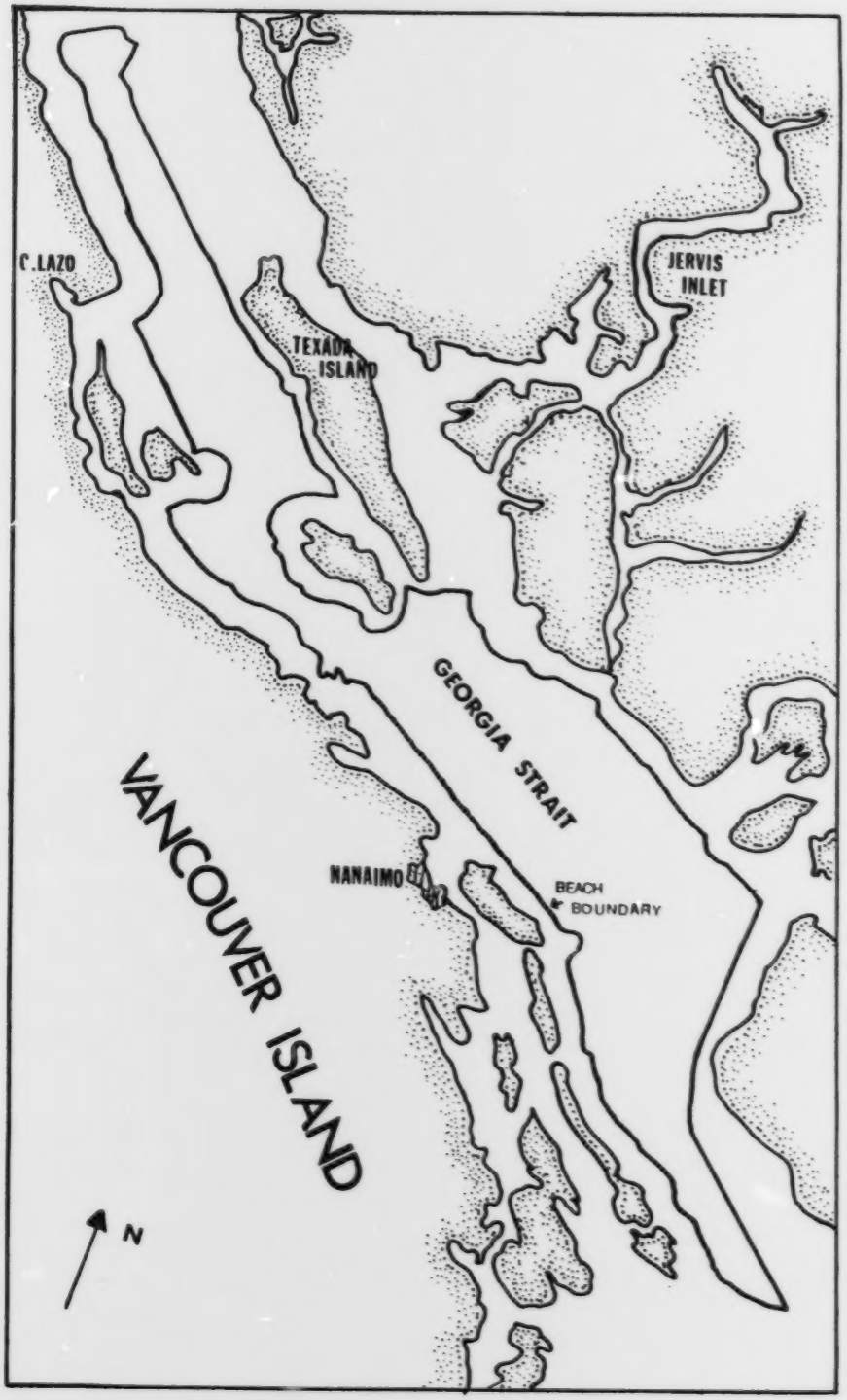

Figure 2. Beach boundaries in the Strait of Georgia.

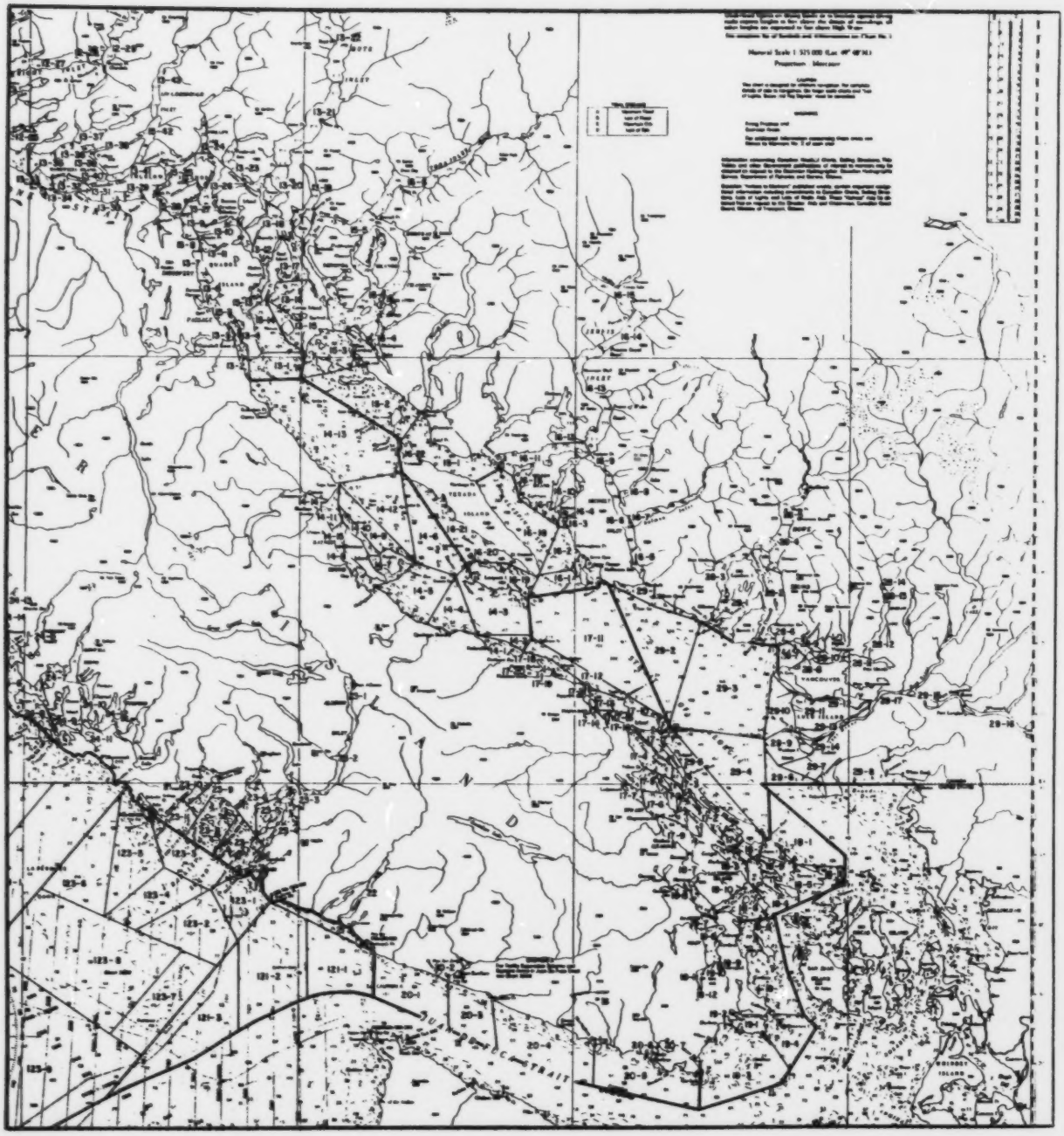

Figure 3. Management subareas for the Strait of Georgia.

Pink catch accrued rapidly during statistical weeks 8-4 (last week of August) and 9-1, however the catch monitoring system was unable to track the sharp rise in pink catch. On September 11 the estimated pink catch was 250,000 pieces, 20,000 pieces over the pink catch ceiling; as a result pink non-retention was implemented by DFO on September 12 (Appendix VI).

Trollers now concentrated on sockeye in a relatively small area of the Strait of Georgia. Since the Salmon Commission did not allow as many days trolling in area 29 as troll representatives had hoped, trollers asked for a return to a previous fishing plan that allowed access to coho. On September 20 DFO agreed to the "beach boundary" coho fishery as originally outlined in the July 11 to 14 plan, with additional waters open for sockeye in areas 16 and 17 (Appendix VII). This fishery continued until September 30 when trolling was closed for the balance of the season.

Table 2 summarizes management actions taken during the 1985 troll season in the Strait of Georgia.

2.3 Troll Catches

Table 3 presents weekly Strait of Georgia troll catches of each species; Table 1 compares total catches with catch ceilings.

The chinook catch was 52,213 pieces, 4.4 percent above the 50,000 catch ceiling. The pink catch of 367,774 pieces was 60 percent (137,774 pieces) over the original 230,000 catch ceiling. This occurred for two reasons. First, the pink catch ceiling was based on a fixed proportion (3%) of the total allowable Canadian catch (TAC). During the season the Pacific Salmon Commission revised the TAC upward due to unexpected strength in the run. This increased the troll catch ceiling to 285,000. Then the Commission revised the TAC downward, but by this time the Georgia Strait troll catch had already exceeded the 285,000 ceiling. This accounted for approximately 55,000 of the 138,000 overun. The remainder was due to inability of the catch monitoring program to track the very sudden rise in pink catch from 222,989 pieces in week 9-1 to 367,774 by the end of week 9-2 (Table 3). These 144,785 pieces were caught in just four days of trolling before the September 11 closure. Georgia Strait trollers caught a total of 183,918 coho, 130,417 sockeye and 2,127 chum salmon during unrestricted fisheries for these species in 1985.

Chinook catches, as discussed earlier, were high in the first week then remained around 5,000 per week after the fishery reopened. In contrast, 1984 weekly chinook catches declined each

week after the fishery opened (Table 4). The first week's chinook catch in 1985 (27,643) was very close to the 1984 catch in the first week (22,021), even though only four days were fished in 1985 compared to seven days during the same week in 1984. This was likely due to similar levels of fishing effort (troll fishing days) in both years (666 days in 1985 and 669 days in 1984).

Figure 4 shows cumulative weekly catches of each species in 1985. Except for pink salmon, catches accrued at a relatively steady rate through most of the 1985 season.

2.4 Shaker Monitoring

The Pacific Salmon Treaty calls for measurement of "new" (post 1984) induced fishing mortality on chinook salmon. Shaker losses resulting from non-retention fisheries were considered to be new induced fishing mortality and the monitoring program was implemented to assess these losses.

There were 44 days in 1985 when trollers in the Strait of Georgia were required to release all chinook salmon. During this period trollers volunteered to record all shakers on a DFO log sheet that was forwarded to the Department on a regular basis during the season. This information, coupled with records from DFO observers and Fishery Officers who boarded trollers, was used to determine shaker rates (shakers per troll fishing day). Only chinook greater than 21 inches fork length were included in the calculation of shaker losses. Shakers under this size were considered to be part of the usual or expected cost of conducting a troll fishery with a 21 in size limit, and therefore were not considered "new" losses. Table 5 presents information used to estimate shaker losses.

The shaker rate averaged 4.34 per troll day based on pooled data from all sources. This rate, multiplied by 3,432 troll days estimated to have been expended on 44 "non-retention" days, gave an estimate of 14,895 shakers over 21 in. Shaker deaths, 4,469, were estimated by multiplying numbers of shakers by an assumed mortality rate of 0.3 on released fish (Argue et al. 1983).

3.0 WEST COAST VANCOUVER ISLAND

3.1 Background

Management actions for the West Coast of Vancouver Island (WCVI) troll fishery were directed toward keeping troll catches within prescribed quotas (Table 1). For chinook and coho these

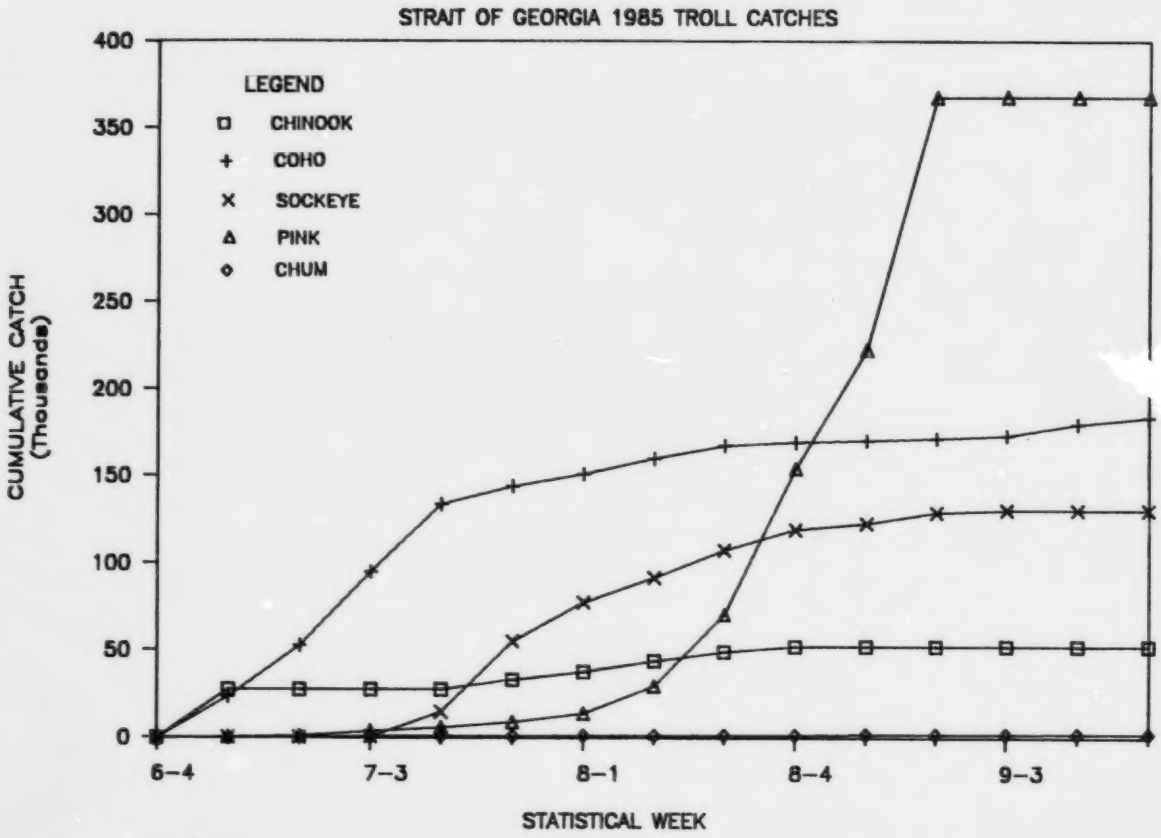

Figure 4. Cumulative weekly troll catches for the Strait of Georgia in 1985.

were 360,000 and 1.75 million, respectively, as specified under the Pacific Salmon Treaty. Troll catch of pink salmon was to be limited to a maximum of 2.22 million pieces. This was based on the MAC decision to allocate 30 percent of the Fraser River pink TAC for Canada to trollers operating on the WCVI (Figures 5 and 6) and in areas 111, 11-1, 11-2 and 12 (Figure 6). The pink TAC of 7.4 million was based on pre-season run size estimates of 16.0 million provided by the Pacific Salmon Commission. The number of pinks allocated to trollers was subjected to change given in-season adjustments to run size by PSC. All pink salmon caught after the troll season opening were assumed to be of Fraser origin. Sockeye and chum catch ceilings, in the same areas as for pinks, were set by MAC to be similar to the WCVI troller's share of 1981 commercial catches of these species in B.C. waters south of Cape Caution. These were 1.6% and 5.1% of the respective commercial catches, as shown below.

1981 Troll Catch in Pieces for
Areas 21 to 27, 121 to 127, 130-1, 111, 11-1, 11-2 and 12
Compared with Total (gillnet, seine and troll)
Catch South of Cape Caution

	Troll Catch	Total Catch	Percentage
Sockeye	73,165	4,675,590	1.6%
Chum	16,221	320,000	5.1%

Catch ceilings coupled with the understanding that troll seasons and areas were to remain similar to those of past years, provided a framework for the WCVI fishing plan. Also of consideration was the Department's desire to avoid, where possible, non-retention fisheries due to the disruptive effect high shaker catches would have on trolling plans and fish stocks.

Appendix VIII outlines the plan that was adopted after consultation with the Pacific Trollers Association (PTA). The early season chinook fishery is not included in this plan. This fishery provided for a 60,000 chinook catch or 22 days of fishing, whichever came first. The fishery lasted from May 7 to 24 (18 days) and the chinook catch totalled 58,111. On July 1 fishing resumed and continued until the season end on September 30.

Table 6 presents management actions taken on the West Coast of Vancouver Island in 1985. Most of these actions, including closure of specific areas such as the Big Bank (Figure 7) and Swiftsure Bank (management subareas 121-1, 121-2, see Figure 5), were designed to slow catches of chinook and avoid a complete

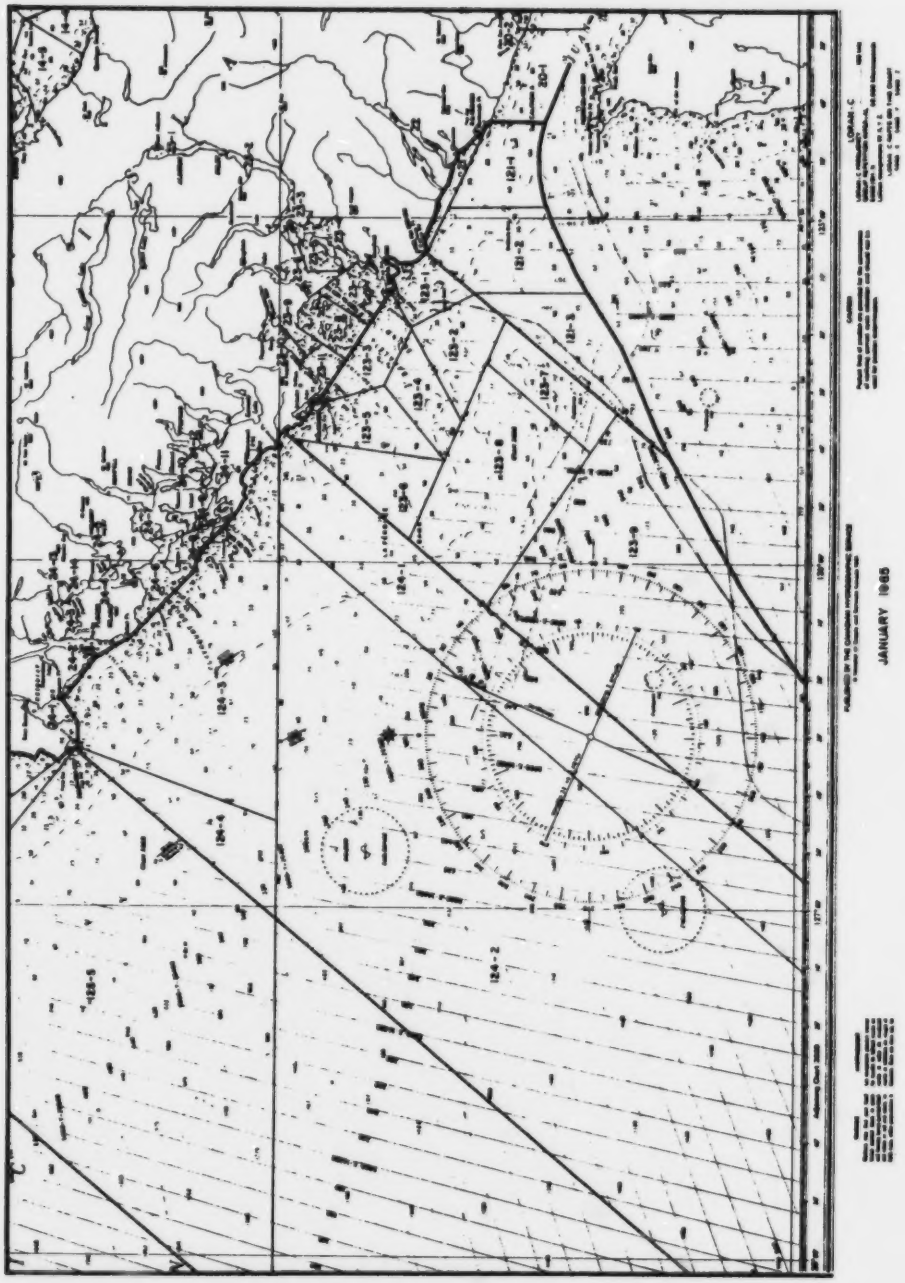

Figure 5. Management subareas for the south West Coast of Vancouver Island.

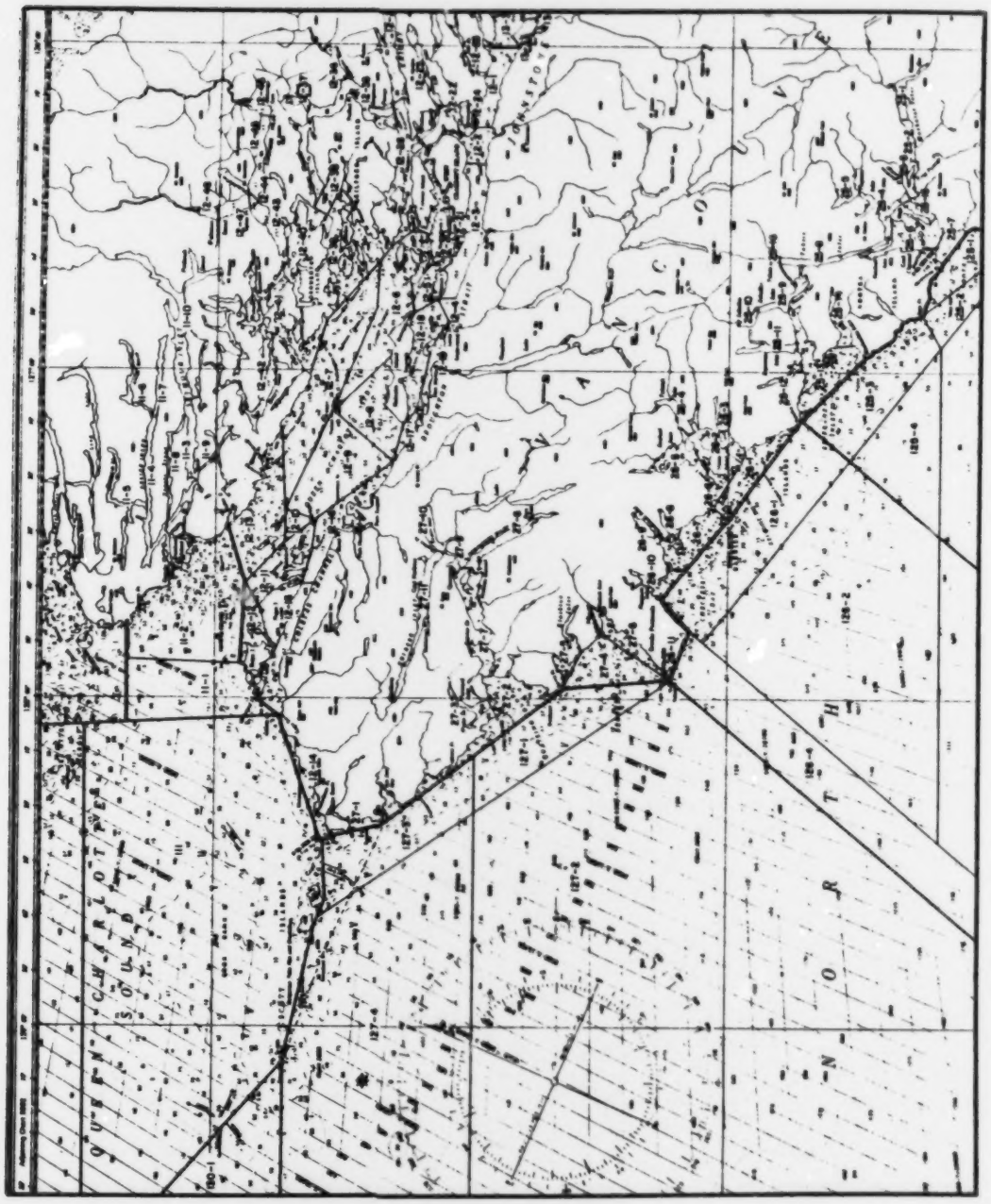

Figure 6. Management subareas for the north West Coast of Vancouver Island and Johnstone Strait.

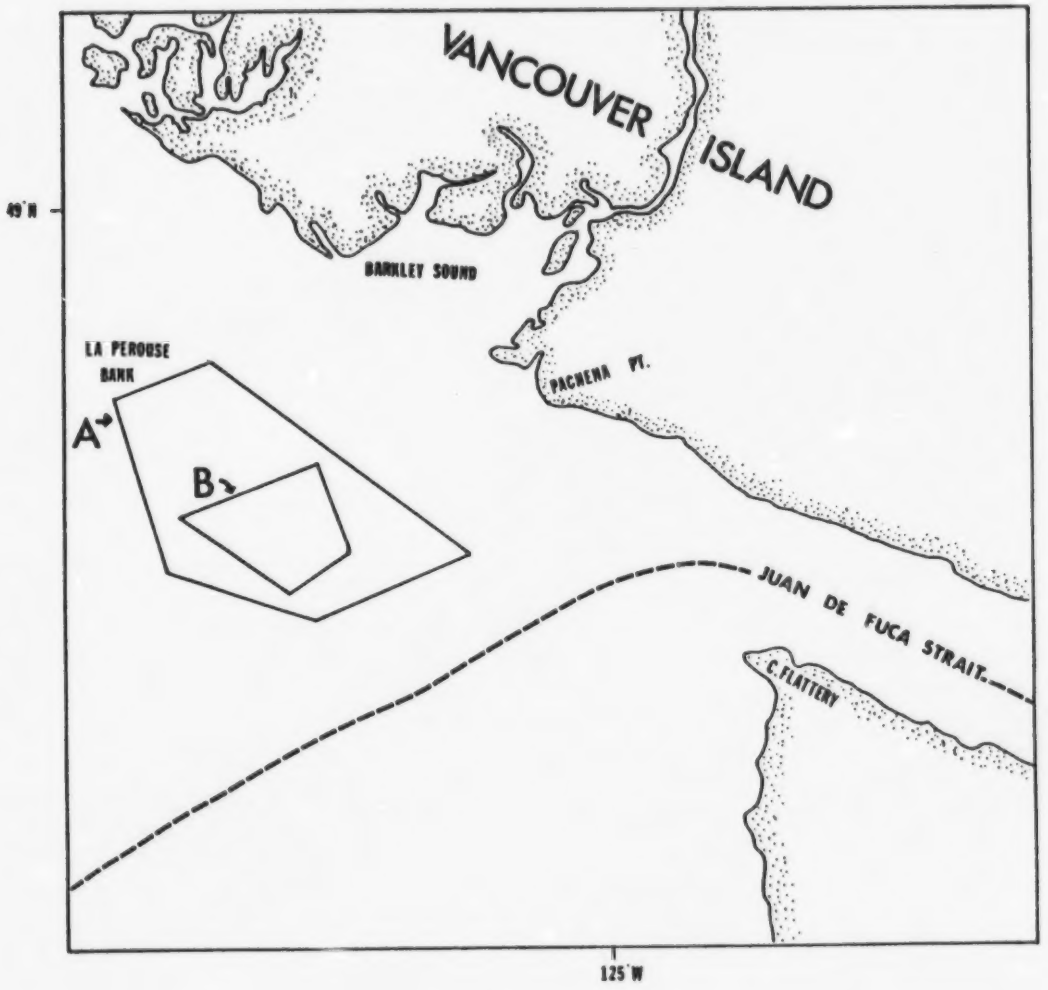

Figure 7. Map showing closed portions of the Big Bank on the West Coast of Vancouver Island.

troll closure.

3.2 The Red Line

Management for catch ceilings required that certain benchmarks be established before fishing began. These were in-season catches, called "red line" catches, that would signal a large enough departure from expected catches to warrant a change in fishing pattern.

The first step in developing red line catches was to forecast expected weekly catches. For chinook this was done for the period from week 7-1 to the end of the season. Two sets of expected, cumulative weekly catches were prepared (Calc 1 and Calc 2 in Table 7). The first set started with the in-season catch estimate for the May fishery (51,570). This catch was incremented each week by the prorated 1984 catch for the same week (1984 catch multiplied by 360,000 / (51,570 plus 1984 catch from 7-1 to end of season ie. 372,000)). The second set also started with 51,570, but the next five week's expected catches were provided by the PTA and the last eight week's catches were calculated as above using a total season catch of 439,300 (provided by PTA) instead of 372,000 in the denominator.

The "red line" was generated by incrementing the expected, cumulative catch (Calc 1 in Table 7), starting in week 7-1, by a proportion that diminished with time. For chinook, the starting proportion was 0.2 and this decreased by 0.02 per week until week 9-2 after which it was held at zero until the end of the season. When in-season catches exceeded the red line value, restrictions to fishing were imposed until the catch was restored to the expected level. The proportions, expressed as percentages that red line catches exceeded expected catches in Table 7, were larger at the commencement of the season than at the end for two reasons. First, higher than expected catches early in the season could be more easily corrected by management actions than could similar catches later in the season. Second, confidence intervals for in-season catch estimates narrow as more sampling data become available during the season (Webb et al. 1983). In other words there is less certainty at the beginning of the season that cumulative catches are accurate and larger red line percentages reflect this uncertainty.

The red line percentages used for the 1985 chinook troll fishery were those agreed to during the co-management process with commercial trollers. Chinook catches exceeded the red line in week 7-2 but recovered to the expected level by week 8-1 (Table 7, Figure 8). Closures of portions of the Big Bank, exact coordinates having been agreed to with trollers prior to the season, were implemented when the red line catch was exceeded.

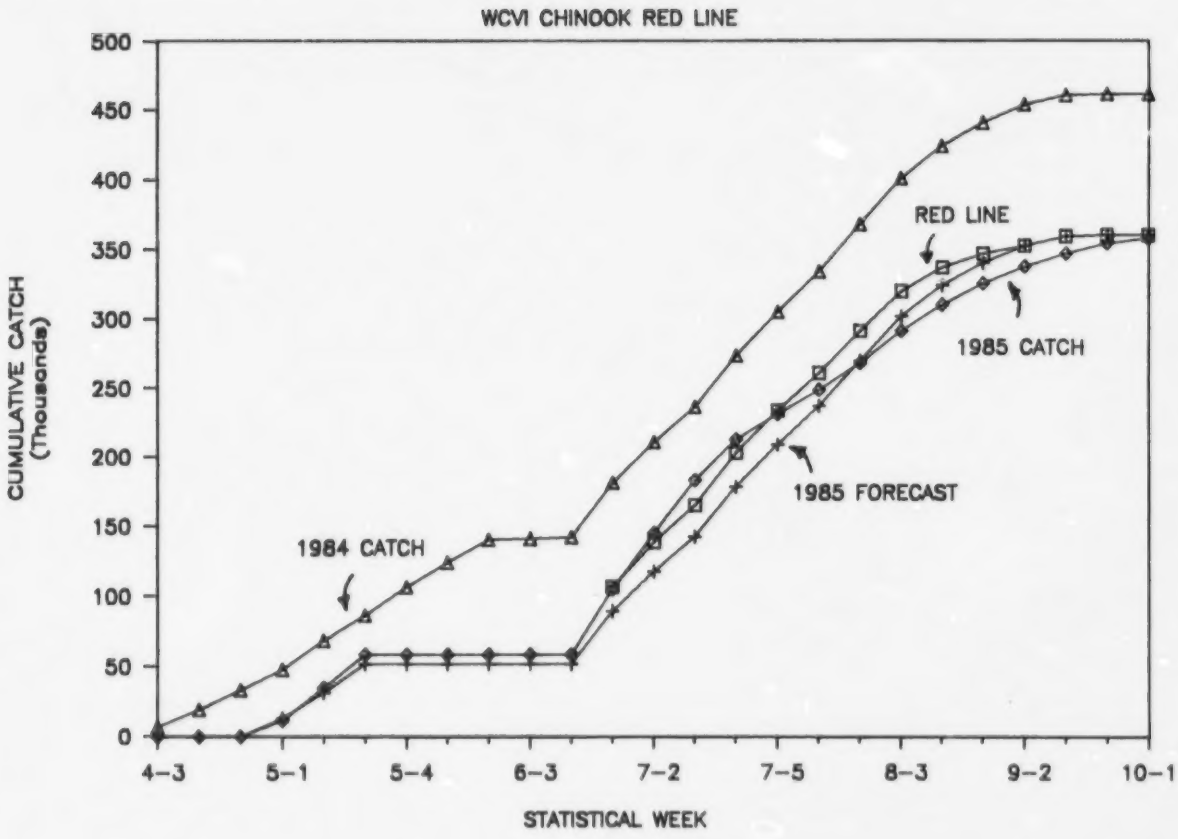

Figure 8. Comparison of cumulative weekly troll catches of chinook in 1984 and 1985 with expected 1985 catches and the red line catch, for the West Coast of Vancouver Island.

These were removed once catch levels were restored.

For coho, neither the red line nor the expected catch were exceeded during the 1985 season (Table 8, Figure 9).

3.3 Troll Catches

The WCVI chinook catch by trollers, based on sales slips processed as of 12 March 1986, was 357,799 (Table 9), very close to the 360,000 catch ceiling. The coho salmon catch was 1,403,561, well below the 1.75 million catch ceiling. Pink catch was 2,478,043, 258,043 pieces (11.6%) over the original 2,220,000 ceiling, but very close to 30 percent (29.5%) of the revised Canadian TAC (8,395,000). Pink catches occurred at a slower rate than expected in 1985, more in line with the 1977-1983 average than the 1979-1981 average as was predicted (Table 10, Figure 10). Finally, 274,814 chum and 1,114,015 sockeye were caught by WCVI trollers in 1985. Figure 11 graphs weekly catch data for each species.

In 1981, the bulk of the troll catch of sockeye was taken from late runs to Weaver Creek and Birkenhead. Peak catches occurred during mid-August. Troll catches of sockeye on this cycle had always been low. For example, in 1977 the total troll catch of sockeye south of Cape Caution was 99,482 pieces or 3.9% of the combined troll and net catch south of Cape Caution. In 1973, sockeye troll catch was 128,793 pieces or 5.9% of the total catch south of Cape Caution. Given the history of low sockeye harvests by trollers, no specific plans were developed for the 1985 sockeye season.

Troll catch ceilings for sockeye and chum were based on the percentage share that trollers had of 1981 commercial catches south of Cape Caution. Using the 1985 pre-season prediction of Canadian TAC, the sockeye troll catch target should have been 77,000 (1.6% of 4.82 million). However, when the TAC was revised by PSC to 8.31 million on September 14, the troll catch target increased to 133,000.

By July 27, when sockeye catch figures to mid-July were available, it was apparent that the troll catch to date of 71,600 was greater than that of past years (Table 11). In fact, the mid-July total was similar to the seasonal total taken in 1981. Reasons for high catches (approach route of run, timing of run, size of run, or additional targeting/fishing effort) were unknown at this time. By August 8 the cumulative troll catch to mid-July was revised to 115,100, and catches during the week of July 27 to August 3 were estimated to be 198,300, for a total as of August 3 of 313,400 troll caught sockeye.

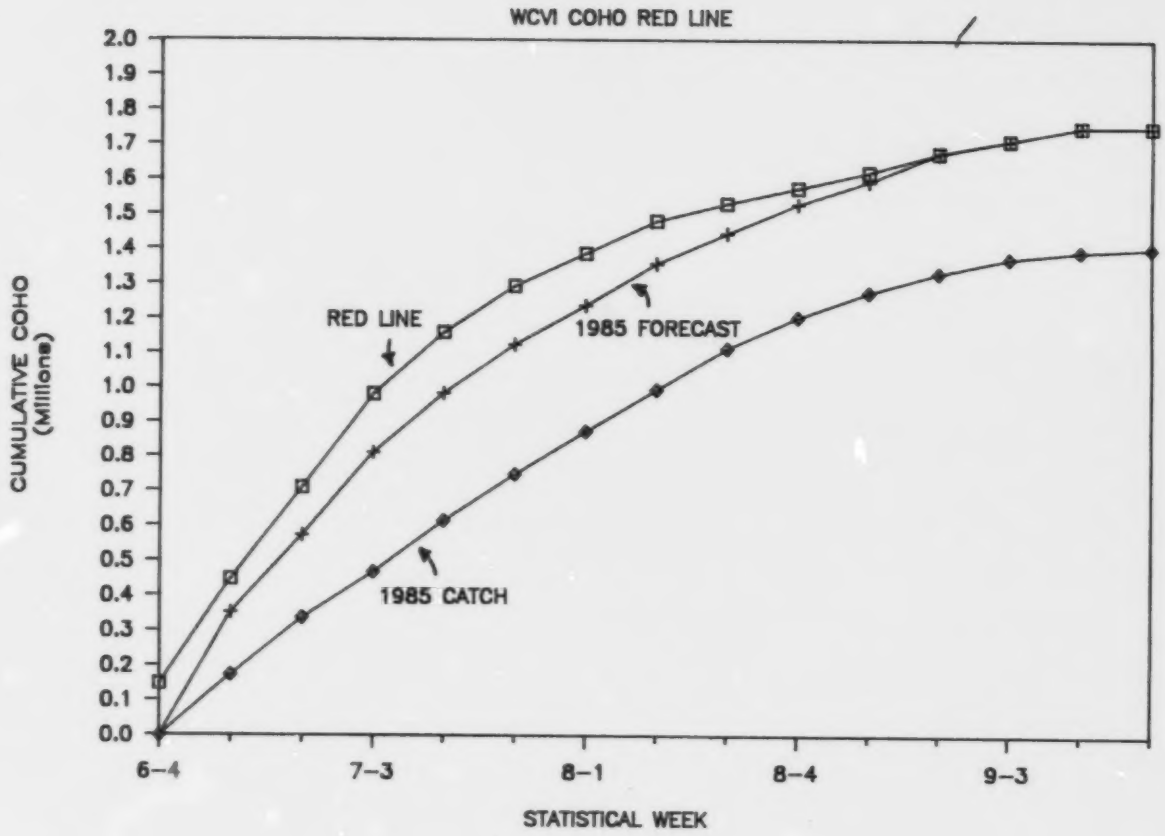

Figure 9. Comparison of cumulative weekly troll catch of coho in 1985 with the red line catch, for the West Coast of Vancouver Island.

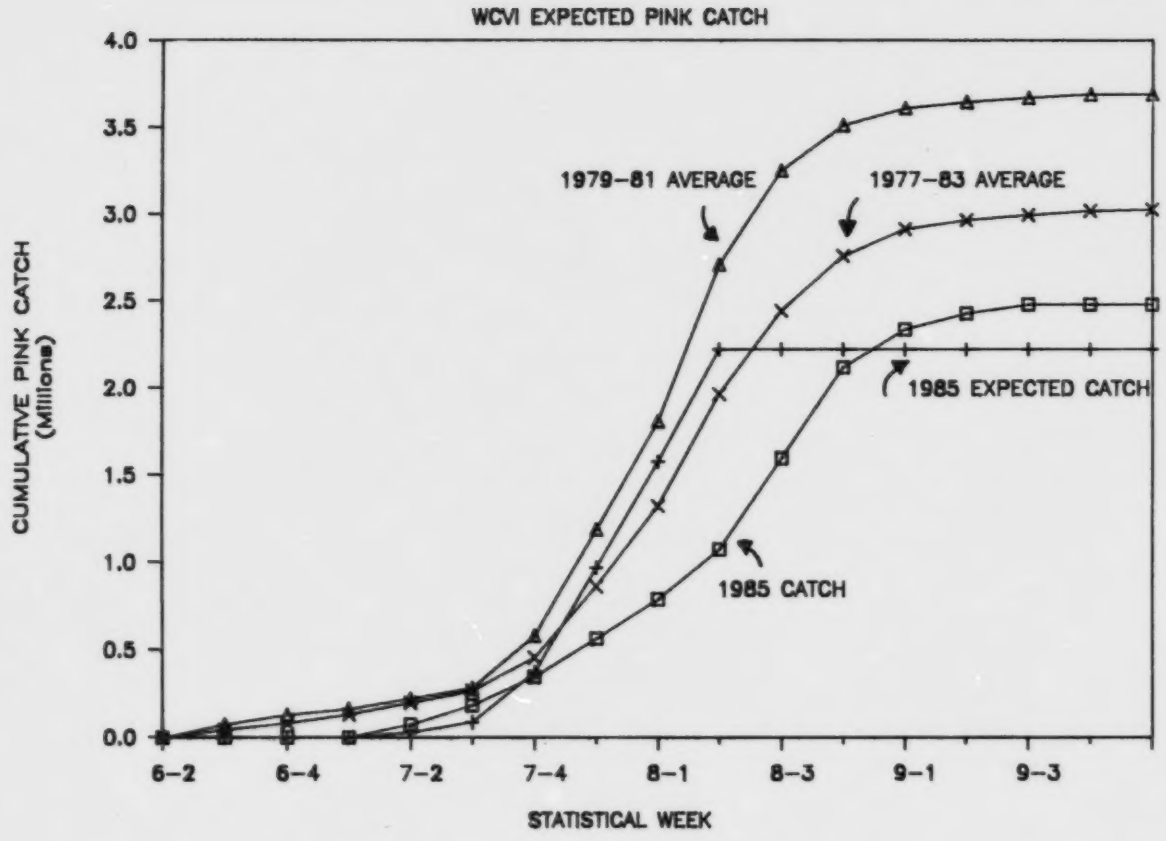

Figure 10. Comparison of expected and actual cumulative weekly troll catches of pink salmon in 1985, for the West Coast of Vancouver Island and Johnstone Strait.

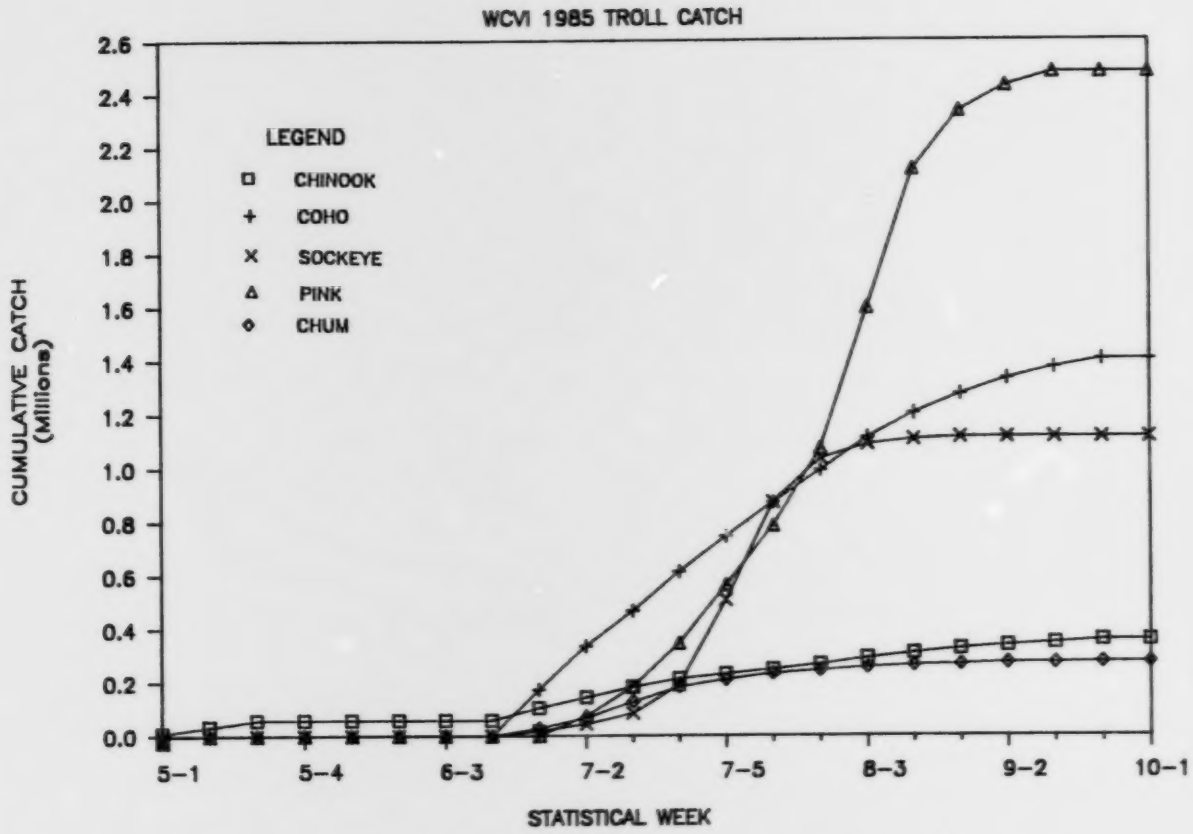

Figure 11. Cumulative weekly troll catches for the West Coast of Vancouver Island in 1985. Johnstone Strait chum, pink, and sockeye catch included.

By August 8 it appeared that the sockeye run was much larger than predicted (this was not confirmed until August 23). It was also apparent that elevated troll catches were due, in part, to additional trolling effort on sockeye. For example, overflight observations on August 7 showed concentrations of trollers in area 121 (100), in area 123 (191) and in area 127 (148) and these vessels were targeting on sockeye. At this point it was concluded that MAC guidelines for sockeye likely had been exceeded since for 313,400 to be 1.6% of the Canadian TAC, the Canadian TAC would have had to be 19.6 million, and this would place the run size well above all current estimates.

Discussions with troll representatives were held on August 13 to review the status of the fishery. Effective August 20, DFO prohibited retention of sockeye salmon by WCVI and Johnstone Strait trollers. By this time trollers had harvested 13.5 percent of the final Canadian TAC of 8,254,000.

Troll catches of chums had traditionally been very low, averaging only 2.2% of the total net and troll catch south of Cape Caution in the previous ten years. It was not until late August that enough information was available to confirm that 1985 troll catches exceeded MAC guidelines. By this time the majority of the season's chum catch had been taken. DFO prohibited retention of chums effective September 11.

4.0 JOHNSTONE STRAIT

Fishing in Johnstone Strait (areas 111, 11-13) is mainly by net gear, therefore troll management actions in 1985 (Table 12), as in previous years, were dictated by concerns for net species and net fleet activities. Consequently, Johnstone Strait trollers were not assigned catch ceilings, but rather had their Johnstone Strait catches assigned to other catch ceilings. For example, chinook caught in areas 111 and 11 were assigned to the north coast catch ceiling, and chinook caught in area 13 were assigned to the Strait of Georgia catch ceiling. Assignment of species to catch ceilings was as follows:

Stat.Area	Chinook	Coho	Pink	Sockeye	Chum
111, 11	North Coast	WCVI	WCVI	WCVI	WCVI
12	No ceiling	No ceiling	WCVI	WCVI	WCVI
13	Georgia Strait	No ceiling	Georgia Strait	Georgia Strait	No ceiling

Table 13 presents the 1985 troll catch in Johnstone Strait (areas 111, 11 and 12 only). The greatest catches were of pink (647,483), coho (82,688) and chum (58,898), whereas only 5,138 chinook were harvested by trollers. Figure 12 plots cumulative weekly troll catches for each species in Johnstone Strait. As with WCVI and the Strait of Georgia, pink catches in Johnstone Strait accumulated faster than did catches of other species.

5.0 SUMMARY

The 1985 troll fishery in southern B.C. was unique because it represented the first time that trolling had been intensively managed during the season. This was largely a result of the terms of the Pacific Salmon Treaty that Canada and the United States ratified early in 1985. DFO outlined management actions in a series of plans that were released to industry prior to and during the season. Management actions included reduction of trolling areas, weekend and longer closures, and periods of non-retention for certain species and fisheries. The purpose of most of these actions was to keep troll harvests within specified levels of catch (catch ceilings) over the duration of the July-September troll season in three areas, Strait of Georgia, West Coast of Vancouver Island and Johnstone Strait.

Troll catch ceilings for chinook and coho on the West Coast of Vancouver Island were approached but not exceeded. The Georgia Strait catch ceiling for chinook was exceeded by less than five percent. West Coast Vancouver Island - Johnstone Strait catch ceilings for sockeye, pink and chum, based on percentage shares of Canadian commercial catches, were exceeded. This was largely due to in-season difficulties in a) predicting run strengths and b) accurately estimating catch during weeks of peak abundance.

In summary, experience gained in 1985 has shown that precise in-season management of the troll fishery is possible and will improve with better statistics on in-season catch and on forecasts of run strength.

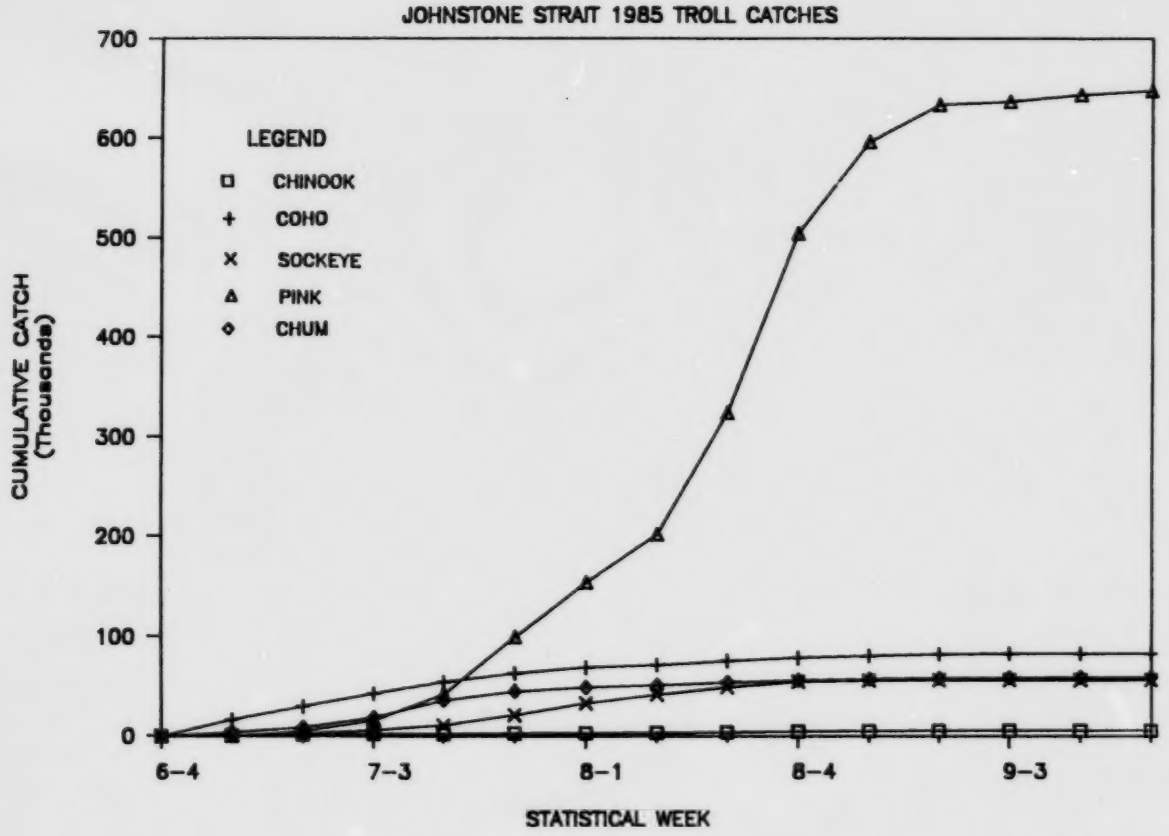

Figure 12. Cumulative weekly troll catches for Johnstone Strait in 1985. Chinook catch for area 12 only.

6.0 ACKNOWLEDGEMENTS

The authors wish to acknowledge Tom Hoyt , Terry Calvin and the staff of the South Coast Division Hook and Line Section for their valuable assistance in preparing data summaries.

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TABLES

Table 1. Summary of catch ceilings, catch allocations and resultant catches for the 1985 south coast troll season.

Species	West Coast Vancouver Island	
	Allocation/ Catch Ceiling	Catch Results
Pink	30% Canadian TAC *	29.5% Canadian TAC
Sockeye	1.6% of commercial catch #	13.5% of commercial catch
Chinook	360,000 pieces	357,799 pieces
Coho	1,750,000 pieces	1,403,561 pieces
Chum	5.1% of commercial catch	8% of commercial catch
	Strait of Georgia	
Pink	3% Canadian TAC *	4.4% Canadian TAC
Sockeye	Ceiling waived in-season	130,417 pieces
Chinook	50,000 pieces	52,213 pieces
Coho	No ceiling	183,918 pieces
Chum	No ceiling	2,127 pieces

* Final Canadian TAC was 8,395,000; 1985 troll catch was 2,478,043 for WCVI and Johnstone Strait, and was 367,774 for Strait of Georgia.

Sockeye allocation to trollers was based on the troll share of the 1981 commercial sockeye catch south of Cape Caution. 1985 catch for WCVI and Johnstone Strait was 1,114,015; 1981 catch was 73,165.

Table 2. Summary of 1985 Strait of Georgia Salmon Troll Fishery

PERIOD	MANAGEMENT ACTIONS			MANAGEMENT AREAS OPEN
	Species	Action	Purpose	
July 1 to 5	All species open	Full retention all areas for 4 days	Commence season and assess fleet and stock Strength	all of 13-1 to 13-3, 13-12 to 13-20 and 13-23
July 6 to 10	Closed	Closed	Protect chinook	All Closed
July 11 to 14	Non-retention chinook	All beaches closed	Protect chinook shakers	All of 13-7 to 13-9, 13-28 to 13-32 and part of 13-27 Friday to Sunday. The offshore portions of 13-14, 13-1, 14-13, 14-12, 14-3, to 14-6, 15-2, 15-3, 16-1, 16-21, 17-11, 18-1, 29-2 to 29-5.
July 15 to 17	Closed	Closed	Protect chinook	All areas closed
July 18 to 27	Non-retention chinook	All beaches closed	Protect chinook shakers	All of 13-7 to 13-9, 13-28 to 13-32 and part of 13-27 Friday to Sunday. The offshore portions of 13-14, 13-1, 14-13, 14-12, 14-3 to 14-6 , 15-2, 15-3, 16-1, 16-21, 17-11, 18-1, 29-2 to 29-5.
July 28 to August 23	All species open	Most beaches closed. More access to Sabine - Young Point area.	Slow rate of chinook catch and permit greater opportunities for pink and sockeye	All of Area 13-7, 13-8, 13-9, 13-28, 13-29, 13-30, 13-31, 13-32 and part of 13-27 Friday to Sunday. The offshore[1] portions of 13-14, 13-1, 14-13, 14-12, 14-3 to 14-6, 15-2, 15-3, 16-1, all of 16-21, 17-11, 18-1, 18-4, 29-2 to 29-5.
August 24 to 31	All species open	Closed part of Area 13, all of Area 14, 15 and most of 16-18; i.e. restricted to Sabine - Young Point only	Further reduce chinook catch while directing fleet toward pink and sockeye	All of Area 13-7, 13-8, 13-9, 13-28, 13-29, 13-30, 13-31, 13-32 and part of 13-27 Friday to Sunday. All of 16-21, 17-11, 18-4, 29-5, Areas 29-1 to 29-4 and 29-6 as per Salmon Commission.

Table 2. Continued

PERIOD	MANAGEMENT ACTIONS			MANAGEMENT AREAS OPEN
	Species	Action	Purpose	
September 1 to 10	Non-retention of chinook	Restricted to Sabine - Young Point area and 29-5, 18-4 and Area 29 fished when open	Chinook troll allocation reached; areas closed to protect chinook shakers	All of Areas 13-7, 13-8, 13-9, 13-28, 13-29, 13-30, 13-31, 13-32 and part of 13-27, open at non-net times. All of 16-21, 17-11, 18-4, 29-5. Areas 29-1 to 29-4 and 29-6 as per Salmon Commission.
September 11 to 9	Non-retention of chinook Non-retention of pink	Restricted to Sabine - Young Point area and 29-5, 18-4 and Area 29 fished when open	Pink troll allocation reached areas remain closed to protect chinook shakers	All of 16-21, 17-11, 18-4, 29-5. Area 29-1 to 29-4 to 29-6 as per Salmon Commission.
September 20 to 30	Non-retention of chinook Non-retention of pink	All beaches closed. Portions of Area 13, 14 reopened	Continue to protect chinook shaker while allowing more access to coho	The offshore[1] portions of Area 13-14, 13-1, 14-13, 14-12, 14-16 14-5, 14-4, 14-3. All Areas of 16-21, 17-11, 18-4 and 29-5.
September 30		CLOSED FOR BLANACE OF SEASON		

Note 1 - Offshore portions refer to areas seaward of a range from
a) 55 fathom to 100 fathom contour; or
b) ½ mile to 2 miles from shore.

Note 2 - Information is incomplete for Areas 29-1 to 29-6

Note 3 - Catch estimates may be revised after sales slip data are complete

Table 3. Weekly Strait of Georgia troll catch and days fishing in 1985.*

Week	Weekly Catch					Troll Days
	Chinook	Coho	Chum	Pink	Sockeye	
6-4	-	-	-	-	-	-
7-1	27,643	23,638	66	467	408	666
7-2	-	29,149	488	633	135	450
7-3	-	42,239	339	2,713	208	624
7-4	-	38,782	29	1,958	13,972	863
7-5	5,652	10,177	88	3,330	40,295	867
8-1	4,348	7,042	71	4,754	22,618	702
8-2	6,285	8,932	72	15,723	14,021	683
8-3	5,225	7,743	126	40,909	15,728	873
8-4	3,060	1,665	146	83,930	11,623	717
9-1	-	1,231	267	68,572	3,655	541
9-2	-	1,125	152	144,785	6,437	742
9-3	-	1,502	37	-	1,317	154
9-4	-	6,791	143	-	-	270
10-1	-	3,902	103	-	-	154
Totals	52,213	183,918	2,127	367,774	130,417	8,306
Week	Cumulative Catch					Cum.Days
6-4	0	0	0	0	0	0
7-1	27,643	23,638	66	467	408	666
7-2	27,643	52,787	554	1,100	543	1,116
7-3	27,643	95,026	893	3,813	751	1,740
7-4	27,643	133,808	922	5,771	14,723	2,603
7-5	33,295	143,985	1,010	9,101	55,018	3,470
8-1	37,643	151,027	1,081	13,855	77,636	4,172
8-2	43,928	159,959	1,153	29,578	91,657	4,855
8-3	49,153	167,702	1,279	70,487	107,385	5,728
8-4	52,213	169,367	1,425	154,417	119,008	6,445
9-1	52,213	170,598	1,692	222,989	122,663	6,986
9-2	52,213	171,723	1,844	367,774	129,100	7,728
9-3	52,213	173,225	1,881	367,774	130,417	7,882
9-4	52,213	180,016	2,024	367,774	130,417	8,152
10-1	52,213	183,918	2,127	367,774	130,417	8,306

* Source: catch and troll days from sales slips processed as of March 12, 1986. Catch and effort for areas 13-18, 29.

Table 4. Weekly Strait of Georgia chinook troll catch in 1984 and 1985.*

Week	1984		1985	
	Catch	Cumulative Catch	Catch	Cumulative Catch
6-4	-	0	-	0
7-1	22021	22,021	27,643	27,643
7-2	24456	46,477	-	27,643
7-3	16776	63,253	-	27,643
7-4	10866	74,119	-	27,643
7-5	5876	79,995	5,652	33,295
8-1	1977	81,972	4,348	37,643
8-2	1702	83,674	6,285	43,928
8-3	2183	85,857	5,225	49,153
8-4	1793	87,650	3,060	52,213
9-1	8	87,658	-	52,213
9-2	70	87,728	-	52,213
9-3	-	87,728	-	52,213
9-4	20	87,748	-	52,213
10-1	410	88,158	-	52,213
Totals	88,158		52,213	

* Source: 1984 catch obtained from Pacific Biological Station data base (Wong 1983) on July 30, 1986; 1985 catch from sales slips processed as of March 12, 1986. Catch for areas 13-18, 29.

Table 5. Estimated chinook shaker losses in the Strait of Georgia in 1985.*

Time Period (1)	Number of Open Days (2)	Average Vessel Count (3)	No. Chinook Shakers <21 in (4)	No. Chinook Shakers >21 in (5)	Number of Hours Sampled (6)
July 11-14	4	127	362	397	1179.5
July 18-27	10	129	374	351	897.5
Sept 1-30	30	54.3	5	6	9
TOTAL	44	78	741	754	2086

Average No. Chinook Shakers >21 in per Hr (7) = (5) / (6)	Assumed No. Hours per Vessel Day (8)	Average No. Chinook Shakers >21 in per Day (9) = (7) x (8)
0.362	12	4.34

Estimated Chinook Shakers > 21 in	
Numbers (10)=(2)x(3)x(9)	Number Killed (10) x 0.3
14,894	4,469

* Chinook shaker data from log books completed by trollers, and from data supplied by DFO observers and Fishery Officers.

Table 6. Summary of 1985 West Coast Vancouver Island Troll Fishery

PERIOD	MANAGEMENT ACTIONS			MANAGEMENT AREAS OPEN
	Species	Action	Purpose	
May 7 to 24	Chinook only	- Fishery opens with barbless hooks only - Swiftsure bank (21, 121-1, 121-2 & 123-1) closed	To open for 22 days or 60,000 chinook while protecting coho and sub-legal chinook	121-3, all of 123 (except 123-1), 124, 125, 126, 127 and 11, 130-1 130-1, all of areas 24, 25, 26, 27 and area 23-3 to 23-11 23-3 to 23-11.
May 25 to June 30	Closed	Closed	Slow catch for purpose of remaining within chinook ceiling	All Closed
July 1 to 9	All species except pink	Fishery reopens except Swiftsure Bank remains closed	Commence fishing for chinook, coho, chum and sockeye. Swiftsure closed to protect sublegal chinook.	121-3, all of 123 (except 123-1), 124, 125, 126, 127 and 130-1, 111 and 11-1; Area 23-3, to 23-11, all of 24, 25, 26 and 27. 24, 25, 26, 27.
July 10 to 14	All species open	- open to pink retention below Solander Island - Swiftsure remains opened	Commence pink fishery Swiftsure closed to protect sublegal chinook	121-3, all of 123 (except 123-1), 124, 125, 126 and 130-1, 111, and 11-1, Area 23-3 to 23-11, all of 24, 25, 26 and 27.
July 15 to 19	All species Open	- Additional opening to pink above Solander Isl. - Swiftsure opened	Expand pink fishery	All of 121, 123, 124, 125, 126, 127 and all of 21, 24, 25, 26, 27 and 23-3 to 23-11 and 130-1, 111, 11-1.
July 20 to 27	All species open	- Local closures inside surfline	Protect local chinook stocks	All of 121, 123, 124, 125, 126, 127 and all of 21, 24, 25, 26 and 23-3 to 23-11 and 130-1, 111 , 11-1 and Area 27-1 to 27-6.
July 28 to 31	All species open	Big Bank closure (area A Fig 7) Area 11-2 opens	Slow rate of chinook catch sockeye stocks cleared Area 11-2	All of 121, 123, 124, 125, 126, 127 and all of 21, 24, 25, 26, 27 and 23-3 to 23-11 and 130-1, 111, 11-1 except portions of management area 123 (see Appendix VIII for details).

Table 6. Continued

PERIOD	MANAGEMENT ACTIONS			MANAGEMENT AREAS OPEN
	Species	Action	Purpose	
August 1 to 3	All species open	Big Bank remains closed Areas inside surfline close to trolling for balance of season	Slow rate of chinook catch protect local chinook stocks	All of 121, 124, 125, 126, 127 and 21; Area 23-3 to 23-11, 24-1 to 24-9 and 24-13 to 24-14, and portions of Management Area 123, and 130-1, 111, 11 (see appendix for details).
August 4 to 20	All species open	Big Bank reopens	Chinook catches return to expected levels	All of 121, 123, 124, 125, 126, 127 and 21; Area 23-3 to 23-11, 24-1 to 24-9 and 24-13 to 24-14 and 130-1, 111, 11.
August 21 to September 2	All species except sock.	Sockeye non-retention for balance of season	Sockeye catch levels exceeded 1981 levels	All of 121, 123, 124, 125, 126, 127 and 21; Area 23-3 to 23-11, 24-1 to 24-9 and 24-13 to 24-14 and 130-1, 111, 11.
September 3 to 6	All species except sockeye	Pink non-retention, Area 11 closed sockeye and pink	Pink allocation reached Area 11 closed to avoid pink shakers	All of 123, 124, 125, 126 and 127; Area 23-3 to 23-11, 24-11 to 24-9 and 24-13 to 24-14 and 130-1, 111 and portions of 121.
September 7 to	All species	Pink reopened	Pink run size revised upward by salmon commission	All of 121, 123, 124, 125, 126, 127 and 21; Area 23-3 to 23-11, 24-1 to 24-9 and 24-13 to 24-14 and 130-1, 111, 11.
September 12 to 20	chinook and coho only	Pink and chum closed	Pink run size revised downward by salmon commission. Chum catch exceeded 1981 levels	All of 123, 124, 125, 126, and 127; Area 23-3 to 23-11 24-1 to 24-9 and 24-13 to 24-14 and 130-1, 111 and portions of 121.
September 21 to 25	Chinook and coho only	Swiftsure closed for balance of season. Big Bank closed for balance of season (Area B Fig. 7) Area 11 opens	Slow rate of chinook catch. Avoid coho shakers. Area 11 pinks cleared.	121-3, all of 124, 125, 126, 127 and Area 11 and Area 130-1, 111 23-3 to 23-11, Area 24-1 to 24-9 and 24-13 to 24-14 and portions of Area 123 (see Appendix VIII for details).
September 26 to 30	Coho only	Chinook closed	Chinook ceiling reached	121-3, all of 124, 125, 126, 127 and Area 11, and Area 130-1, 111 111, 23-3 to 23-11, Area 24-1 to 24-9 and 24-13 to 24-14 and portions of Area 123 (See Appendix VIII for details).
October 1		CLOSED FOR BALANCE OF SEASON		

Note: Information incomplete for Area 11

Table 7. West Coast Vancouver Island red line chinook catches 1985.*

Week	1984 Catch				1985 Forecast Catch		Red Line Catch		1985 Catch			
	21-24	25-27	21-27	Cum.Catch	Calc 1	Calc 2	%	Cumulative	21-24	25-27	21-27	Cum.Catch
4-3	5,894	1,135	7,029	7,029	0	0			-	-	-	-
4-4	10,481	1,776	12,257	19,286	0	0			-	-	-	-
4-5	11,802	2,111	13,913	33,199	0	0			-	-	-	-
5-1	12,463	2,216	14,679	47,878	13,341	13,341			8,180	3,401	11,581	11,581
5-2	17,404	3,027	20,431	68,309	31,446	31,446			18,058	5,030	23,088	34,669
5-3	15,024	3,027	18,051	86,360	51,570	51,570			19,234	4,208	23,442	58,111
5-4	15,622	4,445	20,067	106,427	51,570	51,570			-	-	-	58,111
6-1	13,328	4,535	17,863	124,290	51,570	51,570			-	-	-	58,111
6-2	11,349	4,713	16,062	140,352	51,570	51,570			-	-	-	58,111
6-3	142	381	523	140,875	51,570	51,570			-	-	-	58,111
6-4	504	834	1,338	142,213	51,570	51,570			-	-	-	58,111
7-1	27,734	11,273	39,007	181,220	89,319	94,618	20%	107,182	37,508	9,303	46,811	104,922
7-2	20,909	8,537	29,446	210,666	117,815	127,110	18%	139,022	32,060	8,056	40,116	145,038
7-3	18,371	7,222	25,593	236,259	142,582	155,350	16%	165,395	31,916	6,091	38,007	183,045
7-4	27,299	9,642	36,941	273,200	178,332	196,112	14%	203,298	24,015	5,651	29,666	212,711
7-5	21,806	9,865	31,671	304,871	208,981	231,558	12%	234,059	13,843	4,637	18,480	231,191
8-1	19,322	9,767	29,089	333,960	237,132	255,509	10%	260,845	12,616	4,906	17,522	248,713
8-2	21,267	12,356	33,623	367,583	269,670	283,192	8%	291,244	15,185	4,039	19,224	267,937
8-3	20,906	12,355	33,261	400,844	301,858	310,578	6%	319,970	18,211	5,075	23,286	291,223
8-4	15,351	7,567	22,918	423,762	324,037	329,448	4%	336,998	15,076	3,692	18,768	309,991
9-1	11,100	5,518	16,618	440,380	340,119	343,130	2%	346,921	13,034	2,567	15,601	325,592
9-2	8,549	4,306	12,855	453,235	352,559	353,714	0%	352,559	10,040	2,070	12,110	337,702
9-3	3,710	3,297	7,007	460,242	359,340	359,484	0%	359,340	7,677	1,416	9,093	346,795
9-4	573	123	696	460,938	360,014	360,057	0%	360,014	4,504	3,036	7,540	354,335
10-1	0	0	0	460,938	360,014	360,057	0%	360,014	1,485	1,979	3,464	357,799
Totals	330,910	130,028	460,938						282,642	75,157	357,799	

*Source: 1984 catch obtained from Pacific Biological Station data base (Wong 1983) in March 1986; 1985 catch from sales slips processed as of March 12, 1986; see Section 3.2 for explanation of forecast catch and red line. Catch for areas 121-124 included under 21-24; catch for areas 125-127 included under 21-27. Catches have been backdated one week to reflect time of catch.

Table 8. West Coast Vancouver Island red line coho catches for 1985.*

Week	Cumulative Catch					1985 Forecast	Red Line Catch		1985
	1981	1982	1983	1984	Avg.	Catch	%	Cumulative	Catch
6-4	0	0	0	0	0	0	30.0%	150,000	0
7-1	310,282	269,237	498,196	426,020	375,934	353,369	27.0%	448,779	174,234
7-2	450,916	511,952	874,731	600,799	609,600	573,010	24.0%	710,532	335,891
7-3	618,807	775,381	1,248,309	807,533	862,508	810,737	21.0%	980,992	467,323
7-4	737,984	1,034,191	1,384,613	1,028,014	1,046,201	983,405	18.0%	1,160,417	615,041
7-5	820,526	1,103,020	1,638,956	1,225,145	1,196,912	1,125,070	15.0%	1,293,830	746,756
8-1	909,567	1,212,677	1,764,965	1,383,469	1,317,670	1,238,579	12.0%	1,387,209	873,280
8-2	1,052,567	1,296,516	1,850,105	1,581,289	1,445,119	1,358,379	9.0%	1,480,633	993,239
8-3	1,114,377	1,391,717	1,927,927	1,714,601	1,537,156	1,444,891	6.0%	1,531,585	1,113,379
8-4	1,201,818	1,470,206	1,992,164	1,842,720	1,626,727	1,529,086	3.0%	1,574,959	1,203,641
9-1	1,274,929	1,524,398	2,049,243	1,942,157	1,697,682	1,595,782	1.5%	1,619,719	1,275,431
9-2	1,322,551	1,602,855	2,101,495	2,101,721	1,782,156	1,675,186	0.0%	1,675,186	1,331,458
9-3	1,351,908	1,681,637	2,132,638	2,117,081	1,820,816	1,711,526	0.0%	1,711,526	1,372,910
9-4	1,385,323	1,777,436	2,167,149	2,117,081	1,861,747	1,750,000	0.0%	1,750,000	1,393,654
10-1	1,385,323	1,777,436	2,167,149	2,117,081	1,861,747	1,750,000	0.0%	1,750,000	1,403,561

Source: 1981-1984 from Pacific Biological Station data base (Wong 1983) in March 1986; 1985 from sales slips processed to March 12, 1986; Section 3.4 explains red line data. Catch for areas 21-27, 121-127. Catches have been backdated one week to reflect time of catch.

Table 9. Weekly West Coast Vancouver Island troll catches and days fishing in 1985. Johnstone Strait chum, pink, sockeye catch and days fishing included.

Week	Weekly Catch					Troll Days
	Chinook	Coho	Chum	Pink	Sockeye	
5-1	11,581	-	-	-	-	1,884
5-2	23,088	-	-	-	-	3,343
5-3	23,442	-	-	-	-	3,550
5-4	-	-	-	-	-	-
6-1	-	-	-	-	-	-
6-2	-	-	-	-	-	-
6-3	-	-	-	-	-	-
6-4	-	-	-	-	-	-
7-1	46,811	174,234	27,279	-	17,044	5,273
7-2	40,116	161,657	40,195	74,126	26,719	5,258
7-3	38,007	131,432	58,919	110,605	39,199	5,411
7-4	29,666	147,718	56,687	161,399	107,283	5,479
7-5	18,480	131,715	27,672	218,922	318,509	5,933
8-1	17,522	126,524	21,318	220,975	364,375	5,909
8-2	19,224	119,959	12,472	286,597	164,024	5,167
8-3	23,286	120,140	10,667	522,785	53,095	5,575
8-4	18,768	90,262	8,233	520,364	17,096	5,283
9-1	15,601	71,790	4,534	217,958	6,671	3,944
9-2	12,110	56,027	3,360	94,259	-	3,489
9-3	9,093	41,452	1,022	50,053	-	2,268
9-4	7,540	20,744	895	-	-	1,314
10-1	3,464	9,907	1,561	-	-	351
Totals	357,799	1,403,561	274,814	2,478,043	1,114,015	69,431

Week	Cumulative Catch					Cum.Days
5-1	11,581	0	0	0	0	1,884
5-2	34,669	0	0	0	0	5,227
5-3	58,111	0	0	0	0	8,777
5-4	58,111	0	0	0	0	8,777
6-1	58,111	0	0	0	0	8,777
6-2	58,111	0	0	0	0	8,777
6-3	58,111	0	0	0	0	8,777
6-4	58,111	0	0	0	0	8,777
7-1	104,922	174,234	27,279	0	17,044	14,050
7-2	145,038	335,891	67,474	74,126	43,763	19,308
7-3	183,045	467,323	126,393	184,731	82,962	24,719
7-4	212,711	615,041	183,080	346,130	190,245	30,198
7-5	231,191	746,756	210,752	565,052	508,754	36,131
8-1	248,713	873,280	232,070	786,027	873,129	42,040
8-2	267,937	993,239	244,542	1,072,624	1,037,153	47,207
8-3	291,223	1,113,379	255,209	1,595,409	1,090,248	52,782
8-4	309,991	1,203,641	263,442	2,115,773	1,107,344	58,065
9-1	325,592	1,275,431	267,976	2,333,731	1,114,015	62,009
9-2	337,702	1,331,458	271,336	2,427,990	1,114,015	65,498
9-3	346,795	1,372,910	272,358	2,478,043	1,114,015	67,766
9-4	357,799	1,403,561	274,814	2,478,043	1,114,015	69,080
10-1	357,799	1,403,561	274,814	2,478,043	1,114,015	69,431

Source: catch and troll days from sales slips processd as of March 12, 1986. Chinook and coho catch for areas 21-27, 121-127, 130-1; chum, pink and sockeye catch and troll effort for areas 21-27, 121-127, 111, 11-12. Weekly catch and effort have been backdated by one week to reflect time of catch.

Table 10. Expected weekly West Coast Vancouver Island-Johnstone Strait troll catch of pink salmon in 1985. Catches for odd years from 1977 to 1985 presented for comparison.*

Week	Cumulative Catch				Average Catch		1985 Expected Catch	1985 Catch
	1977	1979	1981	1983	1977-83	1979-81		
6-2	0	0	0	0	0	0	0	0
6-3	30,118	116,521	30,839	577	44,514	73,680	0	0
6-4	70,867	217,052	42,449	821	82,797	129,751	0	0
7-1	195,780	237,596	92,042	1,928	131,837	164,819	0	0
7-2	354,266	310,296	134,196	3,484	200,561	222,246	28,509	74,126
7-3	494,762	374,076	194,000	7,361	267,550	284,038	88,573	184,731
7-4	606,005	860,396	302,077	53,760	455,560	581,237	370,086	346,130
7-5	846,242	1,670,871	708,033	221,566	861,678	1,189,452	968,277	565,052
8-1	1,286,273	2,459,949	1,157,420	381,095	1,321,184	1,808,685	1,575,462	786,027
8-2	1,798,670	3,175,635	2,245,718	636,968	1,964,248	2,710,677	2,220,000	1,072,624
8-3	2,130,109	3,564,714	2,940,681	1,133,534	2,442,260	3,252,698	2,220,000	1,595,409
8-4	2,270,118	3,635,059	3,390,571	1,736,178	2,757,982	3,512,815	2,220,000	2,115,773
9-1	2,303,798	3,666,275	3,555,451	2,112,385	2,909,477	3,610,863	2,220,000	2,333,731
9-2	2,320,874	3,682,530	3,613,756	2,233,569	2,962,682	3,648,143	2,220,000	2,427,990
9-3	2,330,708	3,686,738	3,651,950	2,291,693	2,990,272	3,669,344	2,220,000	2,478,043
9-4	2,334,220	3,697,599	3,681,734	2,347,947	3,015,375	3,689,667	2,220,000	2,478,043
10-1	2,338,070	3,709,147	3,690,827	2,347,947	3,021,498	3,689,667	2,220,000	2,478,043

Source: 1977-1983 catches obtained from Pacific Biological Station data base (Wong 1983) on July 30, 1986; 1985 catch from sales slips processed to March 12, 1986. Catch for areas 21-27, 121-127, 111, 11-12. Catches have been backdated one week to reflect time of catch.

Table 11. Weekly sockeye troll catches in 1985 for the West Coast Vancouver Island and Johnstone Strait.

Week	In-season Catch*	In-season Cum.Catch	End-season Catch#	End-season Cum.Catch
7-1	3,700	3,700	17,432	17,432
7-2	10,100	13,800	26,752	44,184
7-3	20,200	34,000	39,098	83,282
7-4	37,600	71,600	106,456	189,738
7-5	198,300	269,900	317,157	506,895
8-1	363,400	633,300	364,279	871,174
8-2	145,300	778,600	162,536	1,033,710
8-3+	24,400	803,000	73,411	1,107,121
8-4	-	803,000	-	1,107,121

* Catches calculated during the season relied increasingly on sales slip information (Webb et al. 1983). As the season progressed, past weekly catches were being revised. For example, by week 7-5 the week 7-4 catch had been revised to 80,400

Catch from sales slips processed as of October 17, 1985.

+ Trolling for sockeye closed on midnight August 20, 1986.

Table 12. Summary of 1985 Johnstone Strait troll fishery (Area 11 & 12)

PERIOD	STAT. AREA	MANAGEMENT ACTIONS			MANAGEMENT AREAS OPEN
		Species Open	Action	Purpose	
May 7 to 24	11	All except pink	Open troll fishery for 22 days or 60,000 W.C.V.I. chinook ceiling	Commence season as part of early W.C.V.I. chinook fishery	11-1, 11-2
	12	CLOSED	CLOSED	Protect local stocks	CLOSED
May 25 to June 30	11	CLOSED	CLOSED	Slow rate of catch for purpose of remaining within W.C.V.I. chinook ceiling.	CLOSED
	12	CLOSED	CLOSED	Slow rate of catch for purpose of remaining within W.C.V.I. chinook ceiling.	CLOSED
July 1 to 14	11	All except pink	Open troll fishery for balance of season. Area 11-2 CLOSED.	11-2 CLOSED to protect Rivers and Smiths inlet sockeye.	11-1
	12	Chinook and coho only	Trolling in the Deserters Group permitted for the balance of the season. Also net species permitted during subsequent net openings	Provide opportunities for small local troll fleet.	12-10, 12-13
July 15 to 23	11	All species	Pink open 7 days/week Area 11-2 remains CLOSED.	Commence pink fishery. Protect local sockeye stocks.	11-1
	12		Trolling restricted to gill-net times and areas. Trolling 5 days/week. Area 12-26 CLOSED.	Exploit Fraser sockeye. Protect mainland pink stocks.	12-1, 12-3 to 12-5, 12-35

Table 12. Continued

PERIOD	STAT. AREA	MANAGEMENT ACTIONS			MANAGEMENT AREAS OPEN
		Species Open	Action	Purpose	
July 24 to 27	11	All species	Trolling restricted to gill-net times and areas. Trolling 5 days/week. Area 12-26 CLOSED.	Continue troll fishery.	11-1
	12	CLOSED	CLOSED	Protect non target stocks and corresponds to net closure.	CLOSED
July 28 to August 3	11	All species	Area 11-2 opens.	Rivers and Smiths inlet sockeye clear area.	11-1, 11-2
	12	All species	Central portion Queen Charlotte Strait open 2 1/2 days. 12-7, 12-13, 12-26, 12-35, CLOSED	Exploit Fraser sockeye. Protect mainland pink.	12-1, 12-3 to 12-6, 12-8 to 12-12
August 4 to 10	11	All species	Open 7 days/week.	Continue troll fishery.	11-1, 11-2
	12	All species	Central portion Queen Charlotte Strait open 2 1/2 days. 12-7, 12-13, 12-26, 12-35, CLOSED	Exploit Fraser sockeye. Protect mainland pink.	12-1, 12-3 to 12-5, 12-8 to 12-11
August 11 to 17	11	All species	Open 7 days/week.	Continue troll fishery.	11-1, 11-2
	12	All species	Central portion Queen Charlotte Strait open 2 1/2 days. 12-7, 12-13, 12-26, 12-35, CLOSED	Exploit Fraser sockeye. Protect mainland pink.	12-1, 12-3, 12-4, portions of 12-5, 12-8 to 12-11

Table 12. Continued

PERIOD	STAT. AREA	MANAGEMENT ACTIONS			MANAGEMENT AREAS OPEN
		Species Open	Action	Purpose	
August 18 to 20	11	All species	Open 7 days/week.	Continue troll fishery.	11-1, 11-2
	12	All species	Open 2 1/2 days/week.	Exploit Fraser sockeye and pink.	12-1, 12-3, 12-4, portions of 12-5, 12-8 to 12-12
August 21 to 24	11	All species except sockeye	Open 7 days/week.	Continue troll fishery.	11-1, 11-2
	12	All species	Open 2 1/2 days/week.	Exploit Fraser sockeye and pink.	12-1, 12-3, 12-4, portions of 12-5, 12-8 to 12-12
August 25 to September 2	11	All species except sockeye	Open 7 days/week.	Continue troll fishery.	11-1, 11-2
	12	All species	Open 2 1/2 days/week.	Exploit Fraser sockeye and pink.	12-1, 12-3 to 12-6, 12-8 to 12-12
Sept. 3 to Sept. 6	11	CLOSED	CLOSED to all salmon.	W.C.V.I. pink allocation reached CLOSED. Avoid pink shaker losses	CLOSED
	12	All species	Open 2 1/2 days/week.	Exploit Fraser sockeye and pink.	12-1, 12-3 to 12-6, 12-8 to 12-12

Table 13. Weekly Johnstone Strait troll catches and days fishing in 1985.*

Week	Weekly Catch					Troll Days
	Chinook	Coho	Chum	Pink	Sockeye	
6-4	-	-	-	-	-	-
7-1	739	16,767	3,784	-	898	863
7-2	687	13,606	5,216	5,127	1,705	448
7-3	371	12,673	9,737	10,793	3,141	481
7-4	242	11,599	17,512	26,577	5,379	627
7-5	553	8,726	8,956	57,306	10,174	603
8-1	207	5,740	3,904	54,466	11,845	494
8-2	377	2,597	2,075	47,811	8,732	432
8-3	555	3,976	2,568	121,912	7,404	678
8-4	416	2,991	2,356	180,719	5,549	843
9-1	582	1,924	1,450	91,658	877	579
9-2	300	1,725	1,079	37,083	374	352
9-3	105	245	139	2,776	14	48
9-4	4	92	81	7,119	11	20
10-1	-	27	41	4,136	1	8
Totals	5,138	82,688	58,898	647,483	56,104	6,476
Week	Cumulative Catch					Cum. Days
6-4	0	0	0	0	0	0
7-1	739	16,767	3,784	0	898	863
7-2	1,426	30,373	9,000	5,127	2,603	1,311
7-3	1,797	43,046	18,737	15,920	5,744	1,792
7-4	2,039	54,645	36,249	42,497	11,123	2,419
7-5	2,592	63,371	45,205	99,803	21,297	3,022
8-1	2,799	69,111	49,109	154,269	33,142	3,516
8-2	3,176	71,708	51,184	202,080	41,874	3,948
8-3	3,731	75,684	53,752	323,992	49,278	4,626
8-4	4,147	78,675	56,108	504,711	54,827	5,469
9-1	4,729	80,599	57,558	596,369	55,704	6,048
9-2	5,029	82,324	58,637	633,452	56,078	6,400
9-3	5,134	82,569	58,776	636,228	56,092	6,448
9-4	5,138	82,661	58,857	643,347	56,103	6,468
10-1	5,138	82,688	58,898	647,483	56,104	6,476

Source: catch and troll days from sales slips processed as of March 12, 1986. Catch and effort for areas 111, 11 and 12, except chinook catch for area 12 only.

APPENDICES

APPENDIX I

NOTICE TO INDUSTRY

INFORMATION BULLETIN

1985 Salmon Troll Fishing for Strait of Georgia

On June 5, 1985 the Honourable John Fraser announced troll catch limits for the Strait of Georgia. These limits are 50,000 chinook, 100,000 sockeye, 230,000 pink, with no limit on coho salmon. Representatives of the Gulf Trollers Association have worked with the Department in good faith to develop the fishing plans for pinks, sockeye and coho salmon. However, because of the opposition to the chinook limit it was difficult to develop a plan to account for all concerns. Therefore, the Department has adopted the following plan.

The 1985 troll fishing plan is for Statistical Areas 13 to 18 and 29, and provides for:

1. Fishing opportunities during July, August and September.

2. Extended opportunities to fish pink and sockeye salmon in Areas 18 and 29.

3. Fishing times separated from those of net gear in Area 13.

To achieve the catch limits the fishing plan employs:

1. Three weeks of fishing starting July 2, limited to 4 days each week, to harvest coho and chinook. During this time it is anticipated that about 35,000 chinook salmon will be harvested. This will leave about 15,000 chinook as an incidental catch during the targeted pink and sockeye fisheries. The fishing weeks for coho and chinook will be adjusted during the season, if required, to achieve the anticipated chinook catches. The spot closures applicable to the recreational fishery will apply to the commercial troll fishery.

2. Following this fishery, trolling will be conducted seven days per week in designated pink and sockeye areas of Statistical Areas of 16 and 17. Trolling in Area 13 above Seymour Narrows will be conducted during non-net times starting July 19 for three (3) days each week.

Trolling in the convention waters of Areas 18 and 29 will be conducted seven (7) days each week until August 11, 1985 (see Note 4).

Detailed fishing plan is as follows for the coho and chinook fishery to July 20, 1985:

On July 1, 1985

Area 29
Areas 29-1 to 29-6 open during net fishing times from 0800 hours each Monday to 0800 hours each Tuesday.

As of July 2, 1985

Area 13
Areas 13-1 to 13-3 and 13-14 to 13-20 and 13-23 open 0001 hours Tuesday to 2359 hours Friday each week.

Area 14
All sub areas open 0001 hours Tuesday to 2359 hours Friday each week, except Area 14-11 and 14-14 which are closed.

Area 15
All sub areas open 0001 hours Tuesday to 2359 hours Friday each week, except Area 15-6 (Toba Inlet) which is closed.

Area 16
All sub areas open 0001 hours Tuesday to 2359 hours Friday each week.

Area 17
All sub areas open 0001 hours Tuesday to 2359 hours Friday each week, expect Areas 17-7 and 17-14 which are closed.

Area 18
All sub areas open 0001 hours Tuesday to 2359 hours Friday each week, except Areas 18-8 and 18-11 which are closed.

Area 29
Areas 29-1 to 29-5 open 0001 hours Tuesday to 2359 hours Friday each week. Area 29-6 open only during net time.

As of July 19, 1985

Area 13
Areas 13-7 to 13-9 and 13-28 to 13-32 open 0001 hours Friday to 1700 hours Sunday (see Note 6)

The pink and sockeye fishery to late September:

Area 13
Closed to trolling except Areas 13-7 to 13-9 and 13-28 to 13-32, which open 0001 hours Friday to 1700 hours Sunday each week.

Area 14
Closed to trolling until further notice.

Area 15
Closed to trolling.

Area 16
Closed to trolling except Area 16-21, which is open seven (7) days per week.

Area 17
Closed to trolling except Area 17-11 which is open seven (7) days per week.

Area 18
Closed to trolling except Areas 18-1 and 18-4 which are open seven (7) days per week to August 10, 1985 (see Note 4).

Area 29
Closed to trolling except Areas 29-2 to 29-5 which are open seven (7) days per week until August 10, 1985. Area 29-6 open during net times only (see Note 4).

For clarification, the troll fishing plan previously established for Area 12 is as follows:

Area 12
Trolling restricted to net times and areas, except areas 12-10 and 12-13 (deserters group) which are open seven (7) days per week during July 1 to August 31, 1985 (see Note 5).

NOTE 1

The third and a possible fourth week of fishing in July is dependent on a chinook catch target not exceeding 35,000 pieces. Adjustments to the days open for the third and fourth weeks of July will be made if required.

NOTE 2

Areas and times of sport fishing spot closures are also closed to commercial trolling. Contact local Department of Fisheries and Oceans office for details.

NOTE 3

All of the above listed openings are in effect only until the catch limits are reached.

NOTE 4

The Department of Fisheries and Oceans has forwarded a request to the International Pacific Salmon Fisheries Commission for additional fishing opportunities after August 10 in the listed sub areas of Statistical Areas 18 and 19. The granting of these requests is yet to be confirmed.

NOTE 5

Opportunities to fish in Area 12-10 and 12-13 will be limited if troll effort exceeds 1984 levels.

NOTE 6

Possible fishing opportunities in 13-27 are under discussion at this time. An announcement will be made at a later date.

NOTE 7

In addition to closures listed above, normal river mouth boundaries are in effect.

Accurate assessment of catches are essential for the purposes of management. Fishermen and buyers are requested to assist the Department in this process by the accurate and timely reporting on catches in pieces by species on sales slips.

For clarification of details, if required, please call 756-7270, South Coast Division Office.

D.N. BROCK
AREA MANAGER
SOUTH COAST DIVISION

NOTICE TO INDUSTRY

WEST COAST OF VANCOUVER ISLAND COMMERCIAL TROLL FISHING PLAN

The commercial troll fishery on the West Coast of Vancouver Island will open on 0001 hours July 1, 1985. Management unit Areas 21, 121-1, 121-2 and 123-1 will remain closed until 0001 hours July 15, 1985.

Discussions with troll groups will be concluded on Monday, June 24, 1985 and complete details of the troll fishing plan for the West Coast of Vancouver Island will be announced Wednesday, June 26, 1985.

APPENDIX II

NOTICE TO INDUSTRY

During the recent 4-day troll fishery which concluded on Friday, July 5, 1985, it is estimated that 27,300 pieces of chinook salmon were harvested. This figure is well in excess of the 12,000 pieces it was anticipated would be harvested during each of the three proposed 4-day fisheries in early July. As a result, in consultation with the troll representatives, the management strategy for the chinook fishery has now been altered to ensure that the 50,000 ceiling, as set for the Strait of Georgia commercial troll fishery, will not be exceeded in 1985.

The areas that will open to commercial troll fishing have been designed to reduce the catch of chinook salmon and yet allow a directed fishery on coho. These areas, in general, are one (1) to three (3) miles off the shoreline of Vancouver Island, the mainland and islands in the Strait of Georgia. Maps and details of areas being opened will be available Wednesday at Campbell River, Comox, Qualicum, Nanaimo, Duncan, Pender Harbour, Powell River, Campbell Cove and Steveston.

The retention of chinook salmon is prohibited until further notice in all of the areas opened and in Areas 29-2, 29-3, 29-4, 29-5, the retention of sockeye salmon is also prohibited until further notice. (This latter action to protect Early Stuart sockeye salmon.)

During this next 4-day fishery with non-retention of chinook salmon, the incidence of chinook shakers will be closely monitored by Obervers and Fishery Officers and areas with high incidence of shakers will be closed on short notice. At the conclusion of this 4-day fishery, 0001 hours Thursday, July 11, 1985 to 2359 hours, Sunday, July 14, 1985, and after an assessment of the incidence of shakers, discussions will be held with troll representatives on Tuesday, July 16, 1985 regarding future openings in the Strait of Georgia.

Effective 0001 hours, Thursday, July 11, 1985 to 2359 hours, Sunday, July 14, 1985, the following areas will open for commercial trolling of coho, pink and sockeye salmon, except in Areas 29-2, 29-3, 29-4 and 29-5 where retention of sockeye is prohibited.

13-1 That portion of 13-1 southerly and easterly of a line drawn from Shelter Point on Vancovuer Island to Sutil Point on Cortez Island excluding that portion of the above area within three (3) miles of Vancouver Island and within two (2) miles of Cortez Island.

14-13 That portion of 14-13 located three (3) miles off the Vancouver Island shoreline and south of a line drawn from Middlenatch Island to a point located on the southeasterly boundary of Area 14-13 one (1) mile off Favada Point on Texada Island.

14-12 That portion of 14-12 located three miles off Cape Lazo, one (1) mile off Favada Point and two and one half (2 1/2) miles off Flora Islets.

14-6 That portion of 14-6 located two and one half (2 1/2) miles off Flora Islets, one (1) mile off Texada Island and two and one half (2 1/2) miles off the top end of Lasqueti Island.

14-5 That portion of 14-5 located two and one half (2 1/2) miles off the shore of Hornby and Denman Islands and two and one half (2 1/2) miles off the Vancouver Island shoreline.

14-4 That portion of 14-4 located two and one half (2 1/2) miles off the Vancouver Island shoreline.

14-3 That portion of 14-3 located two and one half (2 1/2) miles off the Vancouver Island shoreline and two (2) miles off Lasqueti Island.

16-1 That portion of 16-1 located one (1) mile off Young Point on Lasqueti Island, one (1) mile off Upwood Point on Texada Island and two (2) miles off the Thormanby Islands.

16-21 That portion of 16-21 located one (1) miles off Texada Island and two (2) miles of Lasqueti Island.

17-11 That portion of 17-11 located one (1) mile off Young Point on Lasqueti Island and two (2) miles off Merry Island, the Thormanby Islands and the mainland shore and one (1) mile off Thrasher Rock.

18-1 That portion of 18-1 lcoated two (2) miles off Mayne Island, Samuel Island, Saturna Island and Tumbo Island.

29-2 That portion of 29-2 located two (2) miles off the mainland shore and one (1) mile off Thrasher Rock.

29-3 That portion of 29-3 located one (1) mile off Thrasher Rock and that portion of 29-3 located two (2) miles off Gower Point, two (2) miles off Popham Island and

29-4 That portion of 29-4 located one (1) mile off Thrasher Rock and two (2) miles off Galiano and Mayne Island and seaward of the easterly boundary of 29-4 to the navigation buoy west of the Sand Heads light.

29-5 That portion of 29-5 located one (1) mile off Thrasher Rock and two (2) miles off Valdez and Galiano Island.

APPENDIX III

NOTICE TO INDUSTRY

Updated Troll Fishing Plan for the Strait of Georgia

During the July 16, 1985 meeting with troll representatives from the Strait of Georgia, the July 11 to July 14 fishery was reviewed in detail.

The results of the shaker monitoring program during this directed coho fishery indicated that the chinook shaker incidence was low, about 2,500 pieces in excess of 21". The Department is very appreciative of those fishermen who provided us assistance in this monitoring program.

As a result of the evaluation of the chinook shaker incidence, and in consultation with troll representatives, the fishing areas to be opened on July 18 have been expanded and are detailed below. These additional areas have been added to maximize the available fishing area for coho salmon while avoiding those areas where the incidental catch of chinook salmon would be high. These areas will open to sockeye, pink and coho fishing and will be open 7 days per week until further notice. These fishing areas will be reduced as appropriate where the incidence of chinook shakers is high. Local closures for shakers will be made on short notice and on the grounds.

In summary, the new fishing plan is as follows:

- Commercial troll fishing in the Strait of Georgia will reopen at 0001 hours Thursday, July 18, 1985 in those areas outlined below, seven days per week until further notice.

- During the first ten days of this fishery, July 18 to July 27 inclusive, the retention of chinook salmon will be prohibited. The same intense shaker monitoring program will be conducted during the first ten days of this fishery to monitor the incidence of chinook shakers. Those areas where the incidence of chinook shakers is high will be closed on short notice on the grounds. The intention is to ensure that those areas which remian open after July 27 are only those areas where the incidence of chinook salmon is minimal.

NOTE: Retention of sockeye salmon remains prohibited in Areas 29-2, 29-3, 29-4, 29-5 and 18-1 until 2300 hours July 19, 1985 for the conservation of Early Stuart.

- As of 0001 hours July 28, 1985, retention of chinook salmon in those open areas, will be permitted until such time as the chinook catch reaches 45,000. In addition, on the same date, additional areas will be opened for sockeye and pink fishing. These include the remainder of Area 16-21, 17-11, 18-1 and 18-4 that had been closed until July 28, 1985.

- Once the chinook catch has reached 45,000, the fishing area that will remain open in the Strait of Georgia will be reduced to the following areas only until such time as the sockeye and pink ceilings are achieved:

  Area 16-21, 17-11, 18-1, 18-4, 29-2 to 29-5 inclusive.

- Chinook retention above 45,000 may be permitted in the above areas until the 50,000 ceiling is achieved providing the incidence of chinook shakers has not been significant in the ten day period July 18 to July 27 inclusive. If retention is permitted, it will continue until such time as the chinook ceiling is achieved, at which time non-retention of chinook salmon will be reimplemented. In addition, the fishing areas remaining open may have to be adjusted to keep the incidence of chinook shakers to a minimum.

- Fishing time and areas in Area 29 will be adjusted in consultation with the Salmon Commission and as appropriate in response to any conservation concerns that may arise during the course of this troll fishery in this or adjacent areas.

- Fishermen are requested to ensure that their sales slips are filled out completely as this data is extremely important to the management of this fishery.

- Your continued cooperation in the chinook shaker monitoring program is appreciated.

Effective 0001 hours, Thursday, July 11, 1985 and until further notice, the following areas will open for commercial trolling of coho, pink and sockeye salmon, except in Area 29-2, 29-3, 29-4 and 18-1 where the retention of sockeye is prohibited, until further notice.

13-14 That portion of 13-14 located seaward of the 160 metre contour (87 fathoms) off Quadra Island and seaward of the 100 meter (55 fathoms) contour off Marina Island and Cortez Island.

13-1 That portion of 13-1 located seaward of the 100 metre contour (55 fathoms) off Quadra Island, Vancouver Island and Cortez Island.

14-13 That portion of 14-13 seaward of the 100 metre contour (55 fathoms) off Vancouver Island and seaward of the 100 metre (55 fathoms) off Grant Reefs and one (1) mile off Kiddie Point on Texada Island.

14-12 That portion of 14-12 located seaward of the 100 metre contour (55 fathoms) off Cape Lazo on Vancouver Island, one (1) mile off Flora Islets and one-half (1/2) mile off Favada Point on Texada Island.

14-6 That portion of 14-6 located one (1) mile off Flora Islets and one-half (1/2) mile off Texada Island and two () miles off the top end of Lasqueti Island.

14-5 That portion of 14-5 located two and one-half (2 1/2) miles off the shore of Hornby and Denman Islands and two (2) miles off the Vancouver Island shoreline.

14-4 That portion of 14-4 located two (2) miles off the Vancouver Island shoreline.

14-3 That portion of 14-3 located two (2) miles off the Vancovuer Island shoreline and one (1) mile off Ballenas Islands and one (1) mile off Lasqueti, Jenkins and Sangster Islands.

15-3 That portion of 15-3 located seaward of the 100 metre contour (55 fathoms) off Cortez, Twin and Hernado Islands and one (1) mile off the Malaspina Peninsula, Copeland Islands and one-half (1/2) mile off Townley and Powell Islets.

15-2 That portion of 15-2 located seaward of the 100 metre (55 fathoms) contour off Savary Island, Grant Reefs, Mystery Reef, Harwood Island and the mainland shoreline; one-half (1/2) mile off Vivian Island, Rebecca Rock and one (1) mile off Texada Island.

16-1 That portion of 16-1 located one (1) mile off Young Point on Lasqueti Island, one (1) mile off Upwood Point on Texada Island and one (1) mile off Thormanby Islands.

16-21 That portion of 16-21 located one-half (1/2) mile off Texada Island between Favada Point and the north westerly entrance to Gillies Bay and one (1) mile off Gillies Bay and Mouat Bay and the Texada Island shoreline and one (1) mile off Lasqueti and Fegan Islets.

17-11 That portion of 17-11 lcoated one (1) mile off Young Point on Lasqueti Island and one (1) mile off Merry Island and South Thormanby Island, one (1) mile off the mainland shoreline and one (1) mile off Thrasher Rock.

18-1 That portion of 18-1 located one (1) mile off Mayne Island, Samuel Island, Saturna and Tumbo Islands.

29-2 That portion of 29-2 located one (1) mile off the mainland shoreline, Merry and Trail Islands and one (1) mile off White Islets and Thrasher Rock.

29-3 That portion of 29-3 located one (1) mile off Thrasher Rock and that portion of 29-3 located one (1) mile off Gower Point, Popham Island, Worlcombe Island and Bowen Island, thence seaward of a straight line to the navigation bouy located west of Point Grey and thence seaward of a line drawn from the navigation bouy west of Point Grey to the navigation bouy located west of Sand Heads light.

29-4 That portion of 29-4 located one (1) mile off Thrasher Rock and one (1) mile off Galiano and Mayne Islands and seaward of the easterly boundary of 29-4.

29-5 That portion of 29-5 located one (1) mile off Thrasher Rock and one (1) mile off Valdez and Galiano Island.

Troll fishing times in the net fishery areas in Area 13 will continue to be for the same time period, and in the same areas allowed for gillnets but occur at separate times later each week. Non-retention of chinook salmon will continue in these areas until 0001 hours Friday, August 2, 1985.

Trolling is prohibited in all recreational spot closures in the Strait of Georgia with the exception being Area 29-2 to 29-5 inclusive during net fishing times.

APPENDIX IV

Update for Troll Fishing Plan for the Strait of Georgia

Gulf troll chinook catches will be approximately 45,000 pieces by August 24, 1985.

The fishing boundaries and areas to remain open will be adjusted at this time to provide for a directed pink and sockeye fishery for the balance of the season. This action is in accordance with the Gulf Troll Management Plan developed with troll representatives.

Troll regulations for salmon effective 2359 hours August 24, 1985 are as follows:

Retention of all salmon species in open areas until further notice.

Area 13 - Closed to trolling except 13-7, 13-8, 13-9, 13-28, 13-29, 13-30, 13-31, 13-32 and 13-27 west of a line from Suffolk Point to a boundary sign on Sonora Island. Open 0001 hours Friday to 1700 hours Sunday each week. These open areas and times may change from week to week. Consult local district office for further details.

Area 14 - Closed to trolling.

Area 15 - Closed to trolling.

Area 16 - Closed to trolling except 16-21 open 7 days/week.

Area 17 - Closed to trolling except Area 17-11 open 7 days/week.

Area 18 - Closed to trolling except Area 18-4 open 7 days/week.

Area 29 - Closed to trolling except 29-5 which is open 7 days/week. Areas 29-1 to 29-4 and 29-6 are open at times and areas as designated by the Salmon Commission.

NOTE: All beach boundaries previosuly in effect will be removed in the above open areas as of 2359 hours August 24, 1985.

The remainder of the chinook ceiling (five thousand pieces) is expected to accrue slowly. When the ceiling of 50,000 is reached non-retention of chinook will be implemented and shaker rates will be monitored. Areas of high incidence of chinook shakers will be closed on short notice.

APPENDIX V

Troll Fishing Strait of Georgia

Gulf troll chinook catches are expected to be 50,000 pieces by September 1, 1985.

This catch will complete the chinook allocation to gulf troll therefore non-retention of chinook salmon will be implemented at this time in accordance with the Gulf Troll Management Plan.

Troll regulation for salmon effective 2359 hours September 1, 1985 are as follows:

Retention of all salmon species except chinook in open areas until further notice.

Area 13 - Closed to trolling except 13-7, 13-8, 13-9, 13-28, 13-29, 13-30, 13-31, 13-32, and 13-27 west of a line from Suffolk Point to a boundary sign on Sonora Island. These areas will open at times to be announced. Chinook retention not permitted.

Area 14 - Closed to trolling.

Area 15 - Closed to trolling.

Area 16 - Closed to trolling except 16-21 open 7 days/week. Chinook retention not permitted.

Area 17 - Closed to trolling except area 17-11 open 7 days/week. Chinook retention not permitted.

Area 18 - Closed to trolling except Area 18-4 open 7 days/week. Chinook retention not permitted.

Area 29 - Closed to trolling except 29-5 which is open 7 days/week. Areas 29-1 to 29-4 and 29-6 are open at times and areas as designated by the Salmon Commission. Chinook retention not permitted in Area 29.

NOTE: Areas of high incidence of chinook shakers will be closed on short notice.

APPENDIX VI

NOTICE TO INDUSTRY

Strait of Georgia Troll Fishery - Pink Salmon Closure

Gulf troll catch of pink salmon is estimated to be, as of September 11, 250,000 fish. This catch will complete the pink salmon allocation to inside trollers.

Therefore effective 2000 hours September 12, 1985 and until further notice troll regulations are as follows:

Area 13 - Remains closed to trolling.

Area 14 - Remains closed to trolling.

Area 15 - Remains closed to trolling.

Area 16 - Closed to trolling except 16-21 which is open 7 days a week with non-retention of chinook and pink salmon.

Area 17 - Closed to trolling except 17-11 which is open 7 days a week with non-retention of chinook and pink salmon.

Area 18 - Closed to trolling except 18-4 which is open 7 days a week with non-retention of chinook and pink salmon.

Area 29 - Closed to trolling except 29-5 which is open 7 days a week with non-retention of chinook and pink salmon.

APPENDIX VII

Gulf of Georgia Troll Fishery

Effective 0001 hours Friday, September 20, 1985 and until further notice, the following areas will open for commercial trolling of coho and sockeye salmon only:

Area 13-14 That portion of 13-14 located seaward of the 180 metre contour (100 fathoms) off Quadra Island and seaward of the 100 metre (55 fathoms) contour off Marine Island and Cortez Island.

13-1 That portion of 13-1 located seaward of the 180 metre contour (100 fathoms) off Quadra Island, Vancouver Island and Cortez Island.

14-13 That portion of 14-13 seaward of the 100 metre contour (55 fathoms) off Vancouver Island and seaward of the 100 metre contour (55 fathoms) off Grant Reefs and one (1) mile off Kiddie Point on Texada Island.

14-12 That portion of 14-12 located seaward of the 100 metre contour (55 fathoms) off Cape Lazo on Vancouver Island, one (1) mile off Flora Islets and one-half (1/2) mile off Favada Point on Texada Island.

14-6 That portion of 14-6 located one (1) mile off Flora Islets and one-half (1/2) mile off Texada Island and two (2) miles off the top end of Lasqueti Island.

14-5 That portion of 14-5 located two and one-half (2 1/2) miles off the shore of Hornby and Denman Islands and two (2) miles off the Vancouver Island shoreline.

14-4 That portion of 14-4 located two (2) miles off the Vancovuer Island shoreline.

14-3 That portion of 14-3 located two (2) miles off the Vancouver Island shoreline and one (1) miles off Ballenas Islands and one (1) mile off Lasqueti, Jenkins and Sangster Islands.

16-21 All open.

APPENDIX VIII

1985 SALMON TROLL FISHERY PLANS FOR THE NORTH COAST AND THE WEST COAST VANCOUVER ISLAND

This Bulletin provides a summary, overview and details regarding the 1985 "outside" salmon troll fishing plan that was developed after consultations with troll fishermen that concluded on June 24, 1985.

In addition to the normal methods to advise the troll fleet on current catches and management actions, in 1985 Coast Guard radio stations at Tofino, Alert Bay and Prince Rupert will broadcast information to trollers on the Notice to Shipping channel on the following dates: July 1, July 15, July 30, August 10 and August 20.

The management plan is designed to reduce or avoid non-retention fisheries. However, if non-retention becomes necessary the following procedures will be implemented:

1. Within 72 hours after retention is prohibited, trollers that do not offload their fish are required to have their catch verified by a fishery officer at a designated port.

2. North Coast designated ports are: Masset, Queen Charlotte City, Prince Rupert and Bella Bella.

3. South Coast designated ports are: Port Hardy, Winter Harbour, Tofino, Ucluelet, Kyuquot.

4. Fishery officers will record vessel, skipper and catches, sign the troller's logbook and may inspect the hold to verify catches.

5. All management areas in the plan refer to the current DFO Management Area Chart dated January, 1985.

SUMMARY - North Coast

1. The troll fishery opens July 1, 1985 for all species except pink in Area 11-1 and 111 which opens July 15.

2. T.A.C. for chinook in Areas 1 to 11 and outside the surfline is 203,000 pieces. The T.A.C. for pinks in Area 1 is 700,000 pieces. When 300,000 are taken in Area 1, Management Units 101-4, 101-8, 103 north of 54°35'N latitude will close to pink troll fishing.

3. If the quota for chinook is exceeded then portions of Area 1 and Area 11 and 2W inside and outside the surfline will close to troll fishing.

NORTH COAST

The fishing industry was notified by telex on June 21, 1985 that the following areas would open to troll fishing at 0001 hours on July 1, 1985:

Outside surfline

Areas 101 to 110, 130 and 142

Inside surfline

Area 1
Sub-areas 1-1, 1-2, 1-3, 1-5 and 1-7

Area 2E and 2W
All sub-areas

Area 3
Sub-area 3-1

Area 4
Sub-areas 4-1, 4-2, 4-3, 4-4 and 4-13

Area 5
All sub-areas

Area 6
Sub-areas 6-9, 6-11, 6-13, 6-17

Area 7
Sub-areas 7-1, 7-2, 7-18, 7-19, 7-20, 7-23, 7-25, 7-26, 7-27, 7-31 and 7-32

Area 8
Sub-area 8-1

Area 9
Closed

Area 10
Sub-area 10-1 (sub-area 10-2 opens July 29)

An overview, specific details of all north coast troll fisheries and a summary, supplement the above information.

OVERVIEW

In the North Coast (North of Cape Caution) the commercial troll fishery opens July 1, 1985 for all salmon species with the exception of pink in Management Units 111 and 11-1 (11-2 remains closed), where there is non-retention until July 15.

In the troll fishery, chinook in all of the North Coast and pink in Area 1 will be managed in accordance with the Canada/U.S. agreement. The objective for the chinook fishery in 1985 is to ensure that the troll catch does not exceed 203,000 pieces, while minimizing non-retention fisheries and avoiding, if possible, interference with the harvest of other species. For pink in Area 1, the objective is to ensure that catches do not exceed the 700,000 level in 1985. Details of the actual fishing plans and procedures are outlined below.

Chinook

The 1985 chinook quota in the North Coast is 203,000 pieces of which approximately 7,000 were harvested in the early opening. During the troll opening, catches will be monitored weekly, with a major review scheduled for August 1 and weekly through August and September. If the indications are that the quota will be exceeded then a closure announcement will be made as indicated in the schedule outlined below. The areas to be closed include:

1. All inshore management units of area 2W and the associated offshore waters (Management Units 142-1, 142-2). Inshore Management Units 1-1, 1-2, 1-3, 1-4 and 1-7 of Area 1, and the offshore Management Units 101-1, 101-2, 101-3, 101-4 and those portions of 101-5, 101-6, 101-7, 101-8, and 101-9 lying west of a line drawn magnetic north from Wiah Point to the A-B line.

2. Those portions of Management Units 10-1, 10-2, 11-1 and 11-2 that lie inside of a line due west from Dugout Rocks through Pearl Rocks out to the surfline, then south following the surfline to the Area 11 boundary, then in a diagonal line southeast through Pine Island to the intersection of Management Units 12-11, 12-12 and 12-13.

The schedule of management actions, for use as a rough guide are identified as follows:

Date	Catch	Action
August 1	120,000	Closures in effect August 15
August 1	150,000	Closures in effect on 48-hour notice
August 15	150,000	Closures in effect August 25
August 15	160,000	Closures in effect on 48-hour notice
August 31	190,000	Closures in effect on 48-hour notice

These dates and numbers are intended only as a rough guide. The situation will be reviewed weekly and trollers will be advised of catches.

Pink

Under the Canada/U.S. agreement, if the pink troll catch reaches 300,000 in Area 1 then the most northerly management units of Area 1 will close to pink troll fishing (Management Units 101-4, 101-8 and 103 north of 54°35'N latitude.) All of Area 1 will close to pink salmon troll fishing if the Area 1 troll catch reaches 700,000 pieces. Trollers will be advised of pink catches in season, and a closure date (if necessary) will be announced when the catch reaches 500,000 pieces.

The Area 11 pink troll fishery will be managed in conjunction with the W.C.V.I. pink troll fishery and will close to pink troll fishing when the trollers share of the Fraser River Pink T.A.C. is taken.

SUMMARY - West Coast of Vancouver Island

The 1985 troll fishing plan for the West Coast of Vancouver Island is as follows:

1. Catches for chinook and coho salmon are limited to 360,000 and 1.75 million pieces respectively in accordance with the Pacific Salmon Treaty.

2. Catches for pink salmon are limited to 2.22 million. This limit is based on forecasted run strength to the Fraser River and is subject to change in-season as more information becomes available.

3. Fishing for chinook and coho will start July 1.

4. Pink salmon fishing will start July 10, southeast of Solander Island to the 49° parallel, and July 15 northwest of Solander Island to and including Area 11.

A request has been forwarded to I.P.S.F.C. to provide fishing opportunities for pink salmon below the 49° parallel prior to August 4.

5. Swiftsure (Areas 21, 121-1, 121-2 and 123-1) will remain closed until July 15.

6. Area 11-2 will remain closed until July 28.

7. If necessary to slow the catch rate of chinook and coho for the purpose of avoiding non-retention fisheries and an early end to the fishing season; specific time and area closures will be put into effect as deemed appropriate in consultation with troll groups. This contingency, if required, would likely occur toward the end of July and in the southeast area of Vancouver Island.

8. If and when the pink salmon limitation is achieved (perhaps mid-August) closures in the southeast (Areas 21, 121-1, 121-2, 123-1, 123-3 and 123-4) and in the northwest (Area 11) will be put into effect. At the same time, non-retention will be put into effect for the remainder of W.C.V.I.

OVERVIEW

Catch Limitations

As provided for in the Pacific Salmon Treaty, the 1985 troll catch for West Coast Vancouver Island shall not exceed 360,000 chinook and 1.75 million coho salmon. (Statistical Areas 21, 23, 24, 25, 26, 27, 121, 123, 124, 125, 126, 127 and 130-1). In addition, the troll catch of pink salmon will be limited to 2.22 million pieces. (Statistical Areas as above, and including 111, 11-1 and 11-2). This number is based on the pre-season forecast for the Fraser River return and is subject to adjustment in-season as more run strength information becomes available.

Starting Dates

Fishing for chinook and coho salmon will start on July 1 and continue to September when the catch limits are achieved.

Pink salmon fishing will start July 10 southeast of Solander Island to the 49° parallel, and July 15 northwest of Solander Island to and including Area 11. It is anticipated, given the pre-season forecast, that the pink catch limitation will be achieved during the second week of August. At that

time, area closures at the northern and southern ends of Vancouver Island, in combination with pink non-retention will be in effect.

Specific Area Closures

1. Areas 21, 121-1, 121-2 and 123-1 (Swiftsure) will remain closed until July 15.

2. Area 11-2 will remain closed until July 28.

3. Areas 23-1, 23-2, 24-10, 24-11 and 24-12 remain closed until further notice.

4. Area 25, 26 and 27 (inside the surfline) will close August 1 to September 30.

5. Areas 21, 121-1, 121-2, 123-1, 123-3 and 123-4 plus 11-1 and 11-2 will close for all species when and if the pink catch limit is taken. The areas would reopen once pink salmon have cleared.

Scheduled Catch Rates

The management plan has been designed to avoid, where possible, non-retention fisheries and an early end to the fishing season. Catch rates will be compared to a system of anticipated catches as the season progresses.

If the catch rates of chinook and/or coho progress to a level which, if continued, would result in an early end to the fishing season, specific time and area closures will be used to reduce the rate of catch. Such closures would occur in the southwest area of Vancouver Island. In-season meetings have been established with troll representatives for this contingency.

As an example of the scheduled catch rates to be used as a management guide, the following is provided:

Given the early season chinook catches of 55,000, the scheduled catches are 180,000 for July; 100,000 for August; and 25,000 for September. This yields the annual catch limitation of 360,000. To achieve this schedule, (235,000 seasonal total to the end of July) the catches to July 20 should be about 143,000 to 155,000. Catches above 165,000 by July 20 increase the possibility of an early end to the fishing season. If the higher catch rate continues through to July 27, specific time and area closures will be in effect July 28 as deemed appropriate in consultation with troll representatives.

DETAILS

The detailed fishing plan is as follows:

As of July 1

At 0001 hours, the following management areas are open to commercial trolling for chinook and coho salmon until further notice:

Management Areas 121 to 127 and 130-1, 111, 11-1, 23 and 24.

EXCEPT management areas 21, 121-1, 121-2 and 123-1 (Swiftsure) which are closed to trolling until 2359 hours July 14; and

EXCEPT management areas 23-1, 23-2 (Alberni Inlet) which are closed until further notice.

In addition, Areas 24-10, 24-11 and 24-12 and all of 25 to 27 will be closed to trolling 0001 hours August 1 until further notice. Area 11-2 will remain closed to trolling until 2359 hours July 28.

As of July 10

At 0001 hours the following management areas are open to commercial trolling for pink salmon until the pink catch limitation is reached (see Notes 1 to 3):

Management Areas 121 to 126, Areas 23 and 24.

EXCEPT Areas 21, 121-1, 121-2 and 123-1 (Swiftsure) which are closed until 2359 hours July 14. Areas 23-1, 23-2 (Alberni Inlet) remain closed to trolling until further notice. In addition, Areas 24-10, 24-11 and 24-12 and all of 25 to 27 will be closed to trolling 0001 hours August 1 until further notice. Area 11-12 will remain closed to trolling until 2359 hours July 28.

As of July 15

At 0001 hours July 15 the following Management Areas are open to commercial trolling for pink salmon in addition to those areas opened as of July 10th (see Note 1).

Management Areas 127, 130-1, 111 and 11-1.

EXCEPT Areas 23-1, 23-2 (Alberni Inlet) will remain closed to trolling until further notice. In addition, Areas 24-10, 24-11 and 24-12 and all of 25 to 27 will be closed to

trolling 0001 hours August 1 until further notice. Area 11-2 will remain closed to trolling until 2359 hours July 28.

NOTE 1

It is expected that the allowable troll catch of pink salmon will be attained by mid-August.

NOTE 2

The Department of Fisheries and Oceans has forwarded a request to the International Pacific Salmon Fisheries Commission for fishing opportunities for pink salmon prior to August 4th between the 49th parallel and the International boundary.

NOTE 3

After the troll pink limitation is reached, the following areas will be closed:

Areas 21, 121-1, 121-2, 123-1, 123-3, 123-4, 11-1 and 11-2

These areas will be reopened after the pink stocks have cleared the areas.